TDOT Department of Transportation

Bicycle/Pedestrian Master Plan

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Acknowledgements

We are grateful to the project teams who made this master plan a success:

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Introduction

The City of McMinnville was awarded a Tennessee Department of Transportation (TDOT) Community Transportation Planning Grant (CTPG) in 2020 for a Pedestrian and Bicycle Master Plan. This study identifies the existing conditions and facilities within the study area, identifies the needs based on gaps in the network and potential connections, and provides improvements that will help to complete the bicycle and pedestrian network.

Project Background

TDOT's Office of Community Transportation (OCT) works to coordinate the state's transportation planning, local land use decisions, and community visions to guide the development of a safe and efficient statewide transportation system. As part of this effort, TDOT initiated the CTPG program.

The goals of the Rural CTPG are to:

- Assist rural communities with planning efforts that define the transportation cohesiveness between multimodal transportation systems and local land use objectives that achieve the statewide transportation goals
- Aid with the creation of planning documents that support improvements in traffic flow, safety, and overall efficiency of the transportation system
- Provide governments with planning resources to achieve community visions as related to transportation and land use needs that promote future economic growth

In January 2020, the City of McMinnville submitted a Pedestrian and Bicycle Master Plan application to receive CTPG funding for the area surrounding downtown McMinnville along State Route 55 (S Chancery Street), State Route 56 (Beersheba Highway, E Colville Street, and N Chancery Street), and State Route 380 (Main Street and Morford Street). A copy of the CTPG application can be found in Appendix A.

Project Purpose

There are five parks located within mere miles of one another, but the inconsistent sidewalks, roadway conditions, and lack of bicycle facilities make it difficult for bicyclists and pedestrians to safely navigate between these assets. The City of McMinnville is looking to provide better active transportation opportunities to serve both the local community recreation needs as well as advance their tourism strategic plan. The Pedestrian and Bicycle Master Plan will allow the City to provide thoughtful and intentional infrastructure that addresses the community's fitness and transportation needs.

Public Involvement

Opportunities for public involvement and stakeholder input were provided throughout the plan process. Due to the COVID-19 pandemic and social distancing guidelines in place during the project timeline, the kickoff and second stakeholder meeting were held virtually. Stakeholders from the City were present at the initial kickoff meeting to provide input regarding what types of non-motorized facilities should be prioritized for downtown and south McMinnville. After this kickoff meeting, a public survey was published online and printed copies were made available at the City building for individuals without access to the online version. A second stakeholder meeting was held to present the initial findings and recommendations and gather feedback regarding the plan before the final submission to the Board of Mayor and Aldermen and the Planning Commission. The meeting minutes and public survey results are provided in Appendix B.

Stakeholder Meetings

The City of McMinnville pooled together various interested parties including staff from the Parks and Recreation Department, the Mayor of Warren County, members of the Tourism Development Board, the City Administrator, the Director of Public Works, and members from the bicycle advocacy group (Bike McMinnville) to serve as stakeholders.

The first stakeholder meeting was held on February 26, 2021 in a virtual format. The purpose of this meeting was to introduce the stakeholder group and the project team and to define the scope and project limits of the study. The group reviewed the CTPG application submitted by the City, which is attached in Appendix A. The application discussed the desire to connect the City's recreational facilities to one another while also providing critical connections to downtown McMinnville. While the application originally included desires to connect all five of the City's parks, the study area was confined to the southern portion of the City in order to provide more detailed recommendations for a smaller footprint.

The group discussed the key opportunities for enhancing the bicycle and pedestrian network within the study area. The group discussed the challenges associated with various routes such as topography and right-of-way (ROW) constraints. Ultimately, the group recommended to focus heavily on the SR 56/E Colville Street corridor as the main connection opportunity. The other recommendations were high-level and focused on creating a well-connected non-motorized transportation network. The meeting minutes are provided in Appendix B.

The second stakeholder meeting was held on May 26, 2021, also in a virtual format. The purpose of this meeting was to reconvene with the steering committee and present the proposed improvements based on the data collection and public survey. The group provided comments regarding the master plan improvements, which were refined and are provided in this report.

Public Survey

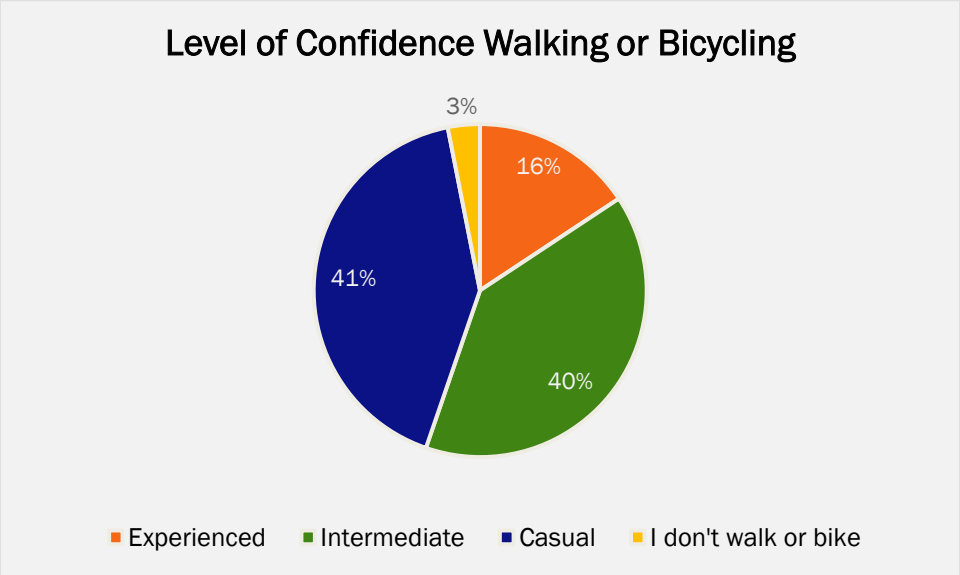
A public survey was distributed by the City and was available between March 16, 2021 through April 11, 2021. The majority of the responses came from individuals using the

online SurveyMonkey platform, but the City also provided hard copies for those without access to a computer or internet. Over 250 responses were received.

The purpose of the public survey was to understand the public's desires regarding walking and biking around McMinnville. A series of demographic questions were asked initially in an attempt to ensure that a broad population was being captured. The majority of respondents fell within the 30-59 age bracket and approximately 75 percent were female. Recreation/leisure was selected as the top reason for currently walking and bicycling while getting to work/school, to get essential needs, and to get to parks were less popular answers.

Figure 1 shows the summary of responses regarding the individual's level of confidence in walking or bicycling. Only 16 percent of the respondents would consider themselves experienced and 3 percent do not walk or bike. This results in over 80 percent of the respondents considering themselves an intermediate or casual walker or cyclist. This is of particular note because the recommendations of this plan should cater to the majority of users. The City of McMinnville should consider separated infrastructure improvements that will make these less experienced users feel the safest.

Figure 1 – Public Survey Question 1: Level of Confidence Walking or Bicycling



When asked why they do not walk or bike more within the study area, the most popular responses were due to a lack of infrastructure, difficult intersections or other crossing areas, and the volume and/or speed of traffic was a deterrent. These answers track with the fact that most of the respondents are intermediate or casual users and would feel more comfortable with facilities that keep them separated from vehicular traffic. When asked what types of infrastructure they would like to see implemented, greenways/trails were ranked first, and bike lanes were ranked last. This indicates that most users feel more comfortable separate from roadway traffic. Upgrading sidewalks and filling sidewalk gaps ranked close in second and third place, respectively. Adding pedestrian crossings ranked fourth.

The final two questions of the public survey asked what route would be preferred between Pepper Branch Park and downtown and between Rocket Park and downtown. The purpose of these questions was to determine the roadway on which most users would feel comfortable so that the appropriate recommendations can be made. Respondents were instructed to rank all three options. If one route were ranked first by every respondent, it would score the highest possible, 3.0. As seen in Figure 2, the preferred route between Pepper Branch Park to downtown was the connection along SR 55/S Chancery Street, scoring 2.22. The second most popular route, which scored slightly lower at 2.14, was to take SR 55/S Chancery Street from Pepper Branch Park to S High Street and then follow S High Street to SR 380/Main Street. The most popular route between Rocket Park and downtown was SR/56 Beersheba Highway, shown in Figure 3.

Figure 2 – Public Survey Question 11: Preferred Route from Pepper Branch Park to Downtown

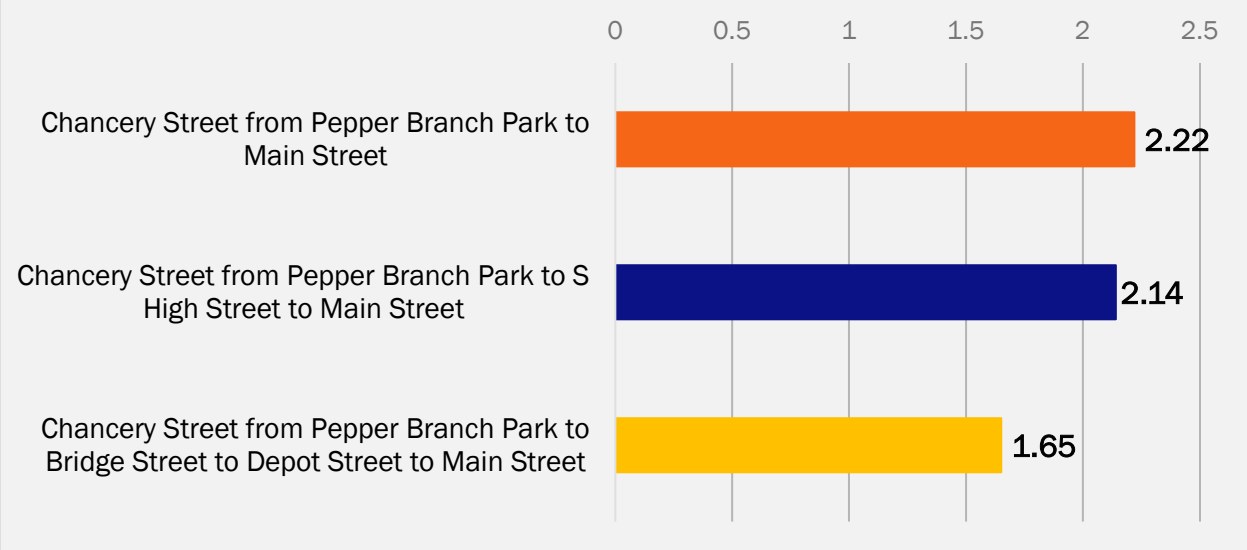
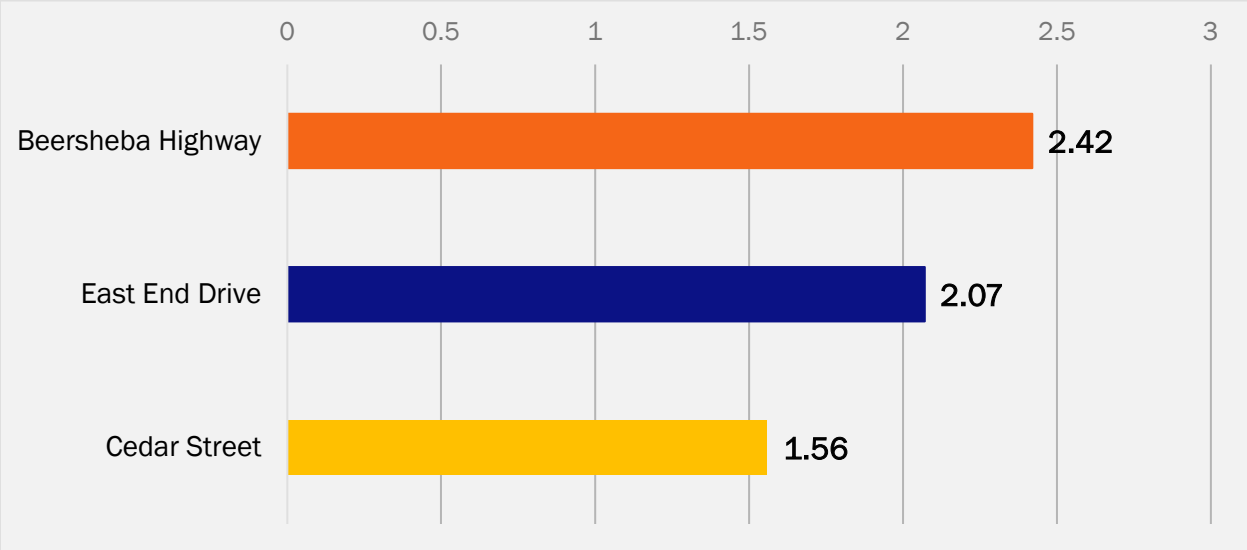


Figure 3 – Public Survey Question 12: Preferred Route from Rocket Park to Downtown



The online survey also included a WikiMap where respondents could indicate specific locations where improvements are needed. Table 1 and Table 2 summarize the comments that were provided for the study area. The public survey results are provided in Appendix B.

Table 1 – WikiMap Point Comments

Location	Category	User Comment
Chancery @ Colville	Dangerous intersection	No crosswalk signal
Durham Street	Gap in sidewalk	No sidewalk along Durham Street to get to waterway, campgrounds, or Rocket Park
Durham Street	Maintenance needed	Potholes, unmaintained clearance, no sidewalks
Durham Street	Traffic too fast/heavy	Vehicles fly downhill, no sidewalk, walkway, or bikeway
Durham Street	Other	Trash and street not maintained or cleaned up
Durham Street	No wheelchair/stroller access	No sidewalk and not cleaned up properly
	Other	Would like safe greenway to connect Rocket Park to Durham Street
Chancery @ Colville	Dangerous intersection	No crosswalk or signal
Depot @ Colville	Dangerous intersection	Crosswalk would be great
Main Street	Other	Raised planters take up too much sidewalk space, making it difficult to walk in groups
Chancery Street Bridge	Other	Sidewalk on Chancery Street bridge is very narrow and separation between pedestrians and vehicles isn't defined well
Morford @ Sparta	Dangerous intersection	No crosswalk
Chancery @ Cemetery	Other	No crosswalk to get from Cemetery Street to Pepper Branch Park
Chancery @ Morford	Dangerous intersection	Lane widens, No left turn
Barren Fork Greenway Trailhead on Chancery Street	Other	Steep drop-off
Lind St @ Main	Dangerous intersection	No bike/ped infrastructure and awkward intersection
Chancery @ Main	Dangerous intersection	Very busy with lots of truck traffic
Chancery @ Main	Dangerous intersection	Utility poles block view and no signal
Lind St @ Main	Dangerous intersection	Confusing intersection with no crosswalk or signal
E Main @ Colville	Dangerous intersection	Bus stop location and lots of pedestrian traffic

Source: Public Survey – Wikimap Responses

Table 2 – WikiMap Line Comments

Location	Category	User Comment
S High Street	Priority walking connection	Sidewalk broken and holes in places
N Spring Street from Morford to Locust	Priority bicycling connection	Bike lane connecting two study areas: N Spring Street or West End Ave
W Colville between Morrison and S High Street	Priority walking connection	Need existing sidewalks repaired
Riverfront Park along W Colville Street to E Main Street/Cedar Street to Rocket Park	Priority bicycling connection	Safe route for biking and walking between three parks
	Priority walking connection	Connect Barren Fork Greenway to Bigbee River Trail
S High Street	Priority bicycling connection	
E Colville Street/Beersheba Highway between E Main Street and Durham Street	Priority walking connection	People frequently walk this route to access convenience stores

Source: Public Survey – Wikimap Responses

Existing Conditions

The City of McMinnville, Tennessee is located along the Barren Fork River and is the largest city and county seat in Warren County. Incorporated in 1868, the City offers many recreational opportunities to its residents and visitors and has several economic opportunities that focus on agriculture and tourism. This chapter will focus on reviewing the socioeconomic conditions of McMinnville, how it has grown over the previous decades, how it has developed, and its land uses. It will also review any relevant planning studies and how they have influenced development within the City. Additionally, it will review the current roadway characteristics from a vehicular perspective and the existing bicycle and pedestrian infrastructure within the City.

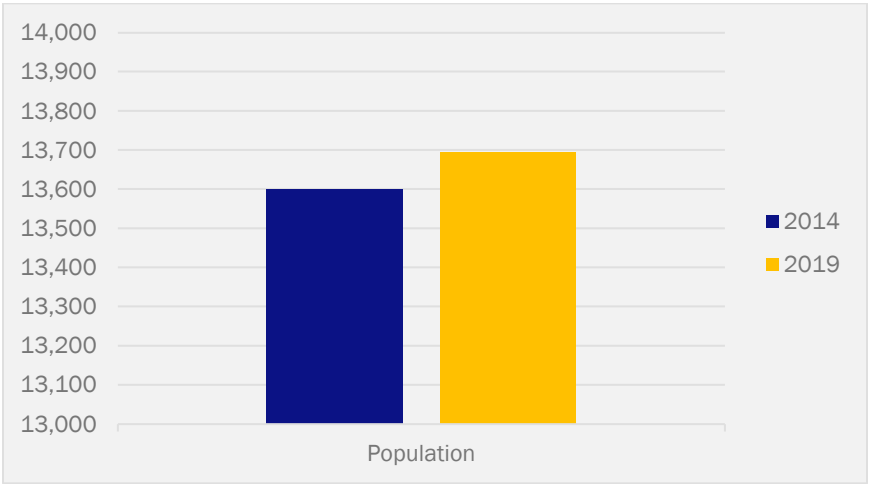
Socioeconomic Conditions

The population of a city greatly affects the needs it will have in the future. How the population of a city is distributed between sex and age, the health of a population, how many people are unemployed and how a population grows are all factors which influence the city and how it will change over coming years. Reviewing and analyzing these conditions is important for any type of city planning but is especially important for non-motorized planning. For example, if a population is growing older, there may be a greater need for more benches and sidewalks, especially in a downtown or other area with prevalent commercial space. This section will focus on reviewing the socioeconomic factors for the City of McMinnville.

Existing Population and Growth Trends

One of the most important factors to understand about a city is how it has grown in the past. The United States Census Bureau collects myriad socioeconomic data which can be used for this review. Based on U.S. Census data, the City of McMinnville, Tennessee had a population of around 13,600 people in the year 2014. By the year 2019, the population of the city had grown slightly to 13,700, as shown in Figure 4.

Figure 4 – City of McMinnville Population



Source: 2019 American Community Survey 5-Year Estimates

According to the data shown in Table 3, the City of McMinnville has seen an annual 0.14 percent increase in population since 2014. McMinnville experienced slower growth than Warren County, the State of Tennessee, and the United States. This is not atypical, as many rural areas throughout the United States have slowed down in population or growth has even declined. Reasons for the slower growth in rural communities are varied but may be related to economic opportunities being concentrated in more suburban and urban areas of the country.

Table 3 – City of McMinnville Annual Population Growth

Year	McMinnville, Tennessee	Warren County, Tennessee	Tennessee	United States
2014	13,600	40,015	6,499,615	316,515,021
2019	13,695	40,702	6,709,356	324,697,795
Annual Growth	0.14%	0.34%	0.65%	0.52%

Source: 2019 American Community Survey 5-Year Estimates

Age and Gender Distribution

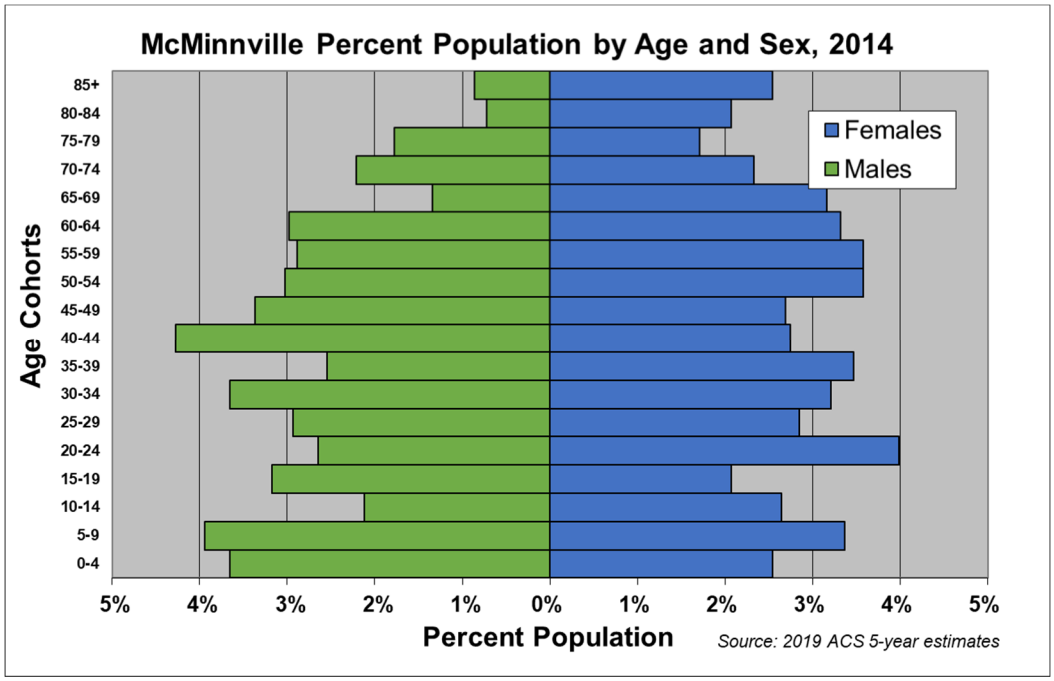
It is important to understand how an area is distributed when it comes to population, as every age group needs something different when it comes to transportation. A younger population may need greater access to schools or parks, whereas an older population may need access to parks, the downtown area, or business districts. Population growth is one of the most important factors in how a city grows over time and greatly affects the overall age distribution of a city's population. A period with rapid population growth, followed by a dramatic decline in growth can lead to age groups that are significantly larger than the ones before or after them. This situation is currently happening in the United States with the generation of Baby Boomers and is having vast impacts on the country[1].

While McMinnville has not grown much in terms of overall population, there has been some change in the distribution of people when broken down by age and sex. Figure 5 and Figure 6 show the 2014 and 2019 age and gender populations, respectively. While the male 65+ population has declined slightly since 2014, those 35 and younger have grown slightly larger. The male 50-64 demographic also increased in 2019. For females, the 65+ demographic has not decreased as much as the male cohort. In general, the shifts for females are not as drastic as in the male age groups.

Figure 7 compares the distribution of ages in McMinnville in the years 2014 and 2019. The age groups of 25-54 make up over one-third of the McMinnville population, with 35-44 being the dominant age group. It should be noted that the younger age groups (under 5 and 10-19) are larger in 2019 than in 2014, indicating population growth.

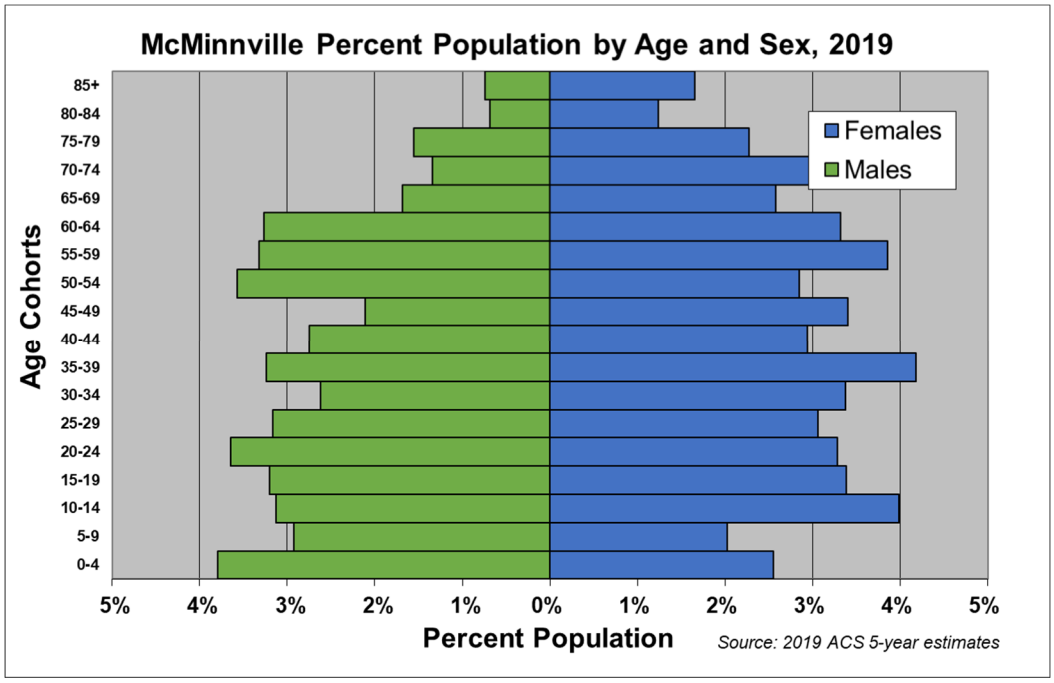
[1] The Baby Boom Cohort in the United States: 2012 to 2060, US Census Bureau

Figure 5 – City of McMinnville Population Pyramid (2014)



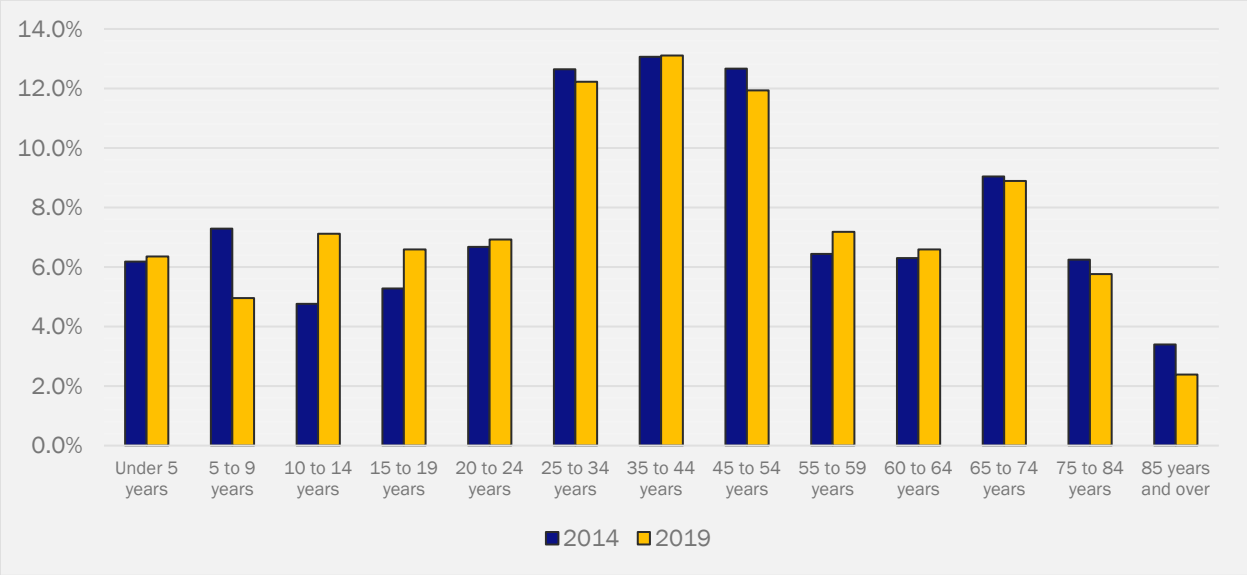
Source: 2019 American Community Survey 5-Year Estimates

Figure 6 – City of McMinnville Population Pyramid (2019)



Source: 2019 American Community Survey 5-Year Estimates

Figure 7 – City of McMinnville Age Distribution (2014 & 2019)



Source: 2019 American Community Survey 5-Year Estimates

In 2014, the median age was 41.0 but was 39.1 in 2019. This shows that while the city is not growing significantly in population, it is growing slightly younger. Non-motorized facility needs differ depending on the ages of the people in those areas, so if trends were to continue, more emphasis may be needed in areas near schools or parks.

Health Factors

Another important component to look at is the health of the citizens in the city or region. The availability of non-motorized infrastructure allows people the option to walk, ride their bicycle, or use another option to travel for work or leisure. Without adequate infrastructure, obesity, diabetes, and hypertension could become more prevalent than in a city with well-connected networks. It is also important to know how many people in a city are disabled, as their needs should be met as well.

The Women, Infants, and Children (WIC)—a component of the Special Supplemental Nutrition Program—provides nutritional assistance to children under the age of 5. They collect health data for these children, which is readily available at the county level but not the municipal level. Per the Tennessee Department of Health, children who are on WIC have higher rates of obesity within Warren County compared to the state overall, but slightly lower rates of children being overweight, shown in Table 4.

Table 4 – Children on WIC and Obesity Rates (2020)

Area	Overweight	Obesity
Tennessee	12.80%	18.40%
Warren County	12.70%	33.60%

Source: https://www.tn.gov/health/health-program-areas/fhw/wic/redirect-wic/data-stats.html

The prevalence of diabetes in a city is another important health factor to consider. Higher rates could indicate a lack of options for exercise and recreation, poor availability for healthy grocery stores, or some other factor. While this data is not captured at the municipal level, it can be reviewed at a county level. Table 5 shows the prevalence of diabetes in the population within Warren County as well as within the state of Tennessee in 2019. The number of people who have been diagnosed with diabetes is higher within Warren County than the state overall, though these numbers do not break down by the type of diabetes.

Table 5 – Diagnosed Diabetes Prevalence (2019)

Area	Diabetes
Tennessee	12.2%
Warren County	14.1%

Source: https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html

It is also important to understand the number of individuals who are currently disabled in a community. People with disabilities have the right to move freely around their city, so it is important to plan for these populations. According to the U.S. Census Bureau data, in 2019 23.6 percent of those that live within the city are disabled in some fashion.

Employment

According to US Census data, in the City of McMinnville the current average commute time is 22.5 minutes, which is slightly shorter than the national average of 26.9 minutes. There are 6,091 people over the age of 16 with some sort of earnings. There are a total of 3,984 full-time workers within the City of McMinnville, whose median salary is $32,720. The current poverty rate is 31.6 percent. Overall, there is a considerable population who work in some form or capacity, yet the poverty rate is relatively high.

It is important for cities to have good infrastructure that serves its citizens for recreational as well as commuting purposes. Giving people choices for their commutes could allow for shorter travel times overall in the area while also increasing health benefits. Additionally, walking and bicycling are considerably less expensive than owning a vehicle.

Tourism

The City of McMinnville has numerous recreational options for visitors to their area. Between the number of rivers, trails, and scenic sites, there is much to offer. Tourism is certainly important to the area, and to Tennessee as a whole, being the second largest industry to the state. The McMinnville Adventure Tourism Plan details specifically how important visitors are to their area, and what methods the area should employ to try and bring more over the coming years. In the report, the economic impact to Warren County is noted between 2013 and 2016 and is shown in Table 6. The table shows how, year after year, the economic impact of tourism to the area has increased. The expenditures, payroll, and tax receipts within Warren County have continued to increase from 2013 to 2016.

Table 6 – Economic Impact of Travel in Warren County (2013-2016)

Year	Expenditures ($ millions)	Payroll ($ millions)	Employment (thousands)	State Tax Receipts ($ millions)	Local Tax Receipts ($ millions)
2013	$22.50	$3.34	0.14	$1.27	$0.89
2014	$23.11	$3.36	0.14	$1.31	$0.92
2015	$23.17	$3.44	0.14	$1.38	$0.94
2016	$23.80	$4.06	0.16	$1.44	$0.98

Source: McMinnville Adventure Tourism Plan (Table 1)

The same report also notes that the number of visitors were increasing within this same time to some of the popular parks within Warren County – Rock Island, Fall Creek Falls, and South Cumberland State Park. Without visitors to the region, economic growth in the area would certainly be stunted. Focusing on tourism may be a way to further increase a positive economic impact to the area with more outdoor recreational activities in the area. Regional networks of trails, bike lanes, or greenways are several examples that could be pursued.

Existing Land Uses

The City of McMinnville's current development was reviewed to determine where it occurred throughout the area, what areas of the city may have low-income housing, and which areas would be of interest to those who live in or visit the area. Understanding these development patterns may provide more insight into where non-motorized infrastructure is needed for the city.

Land Use Analysis

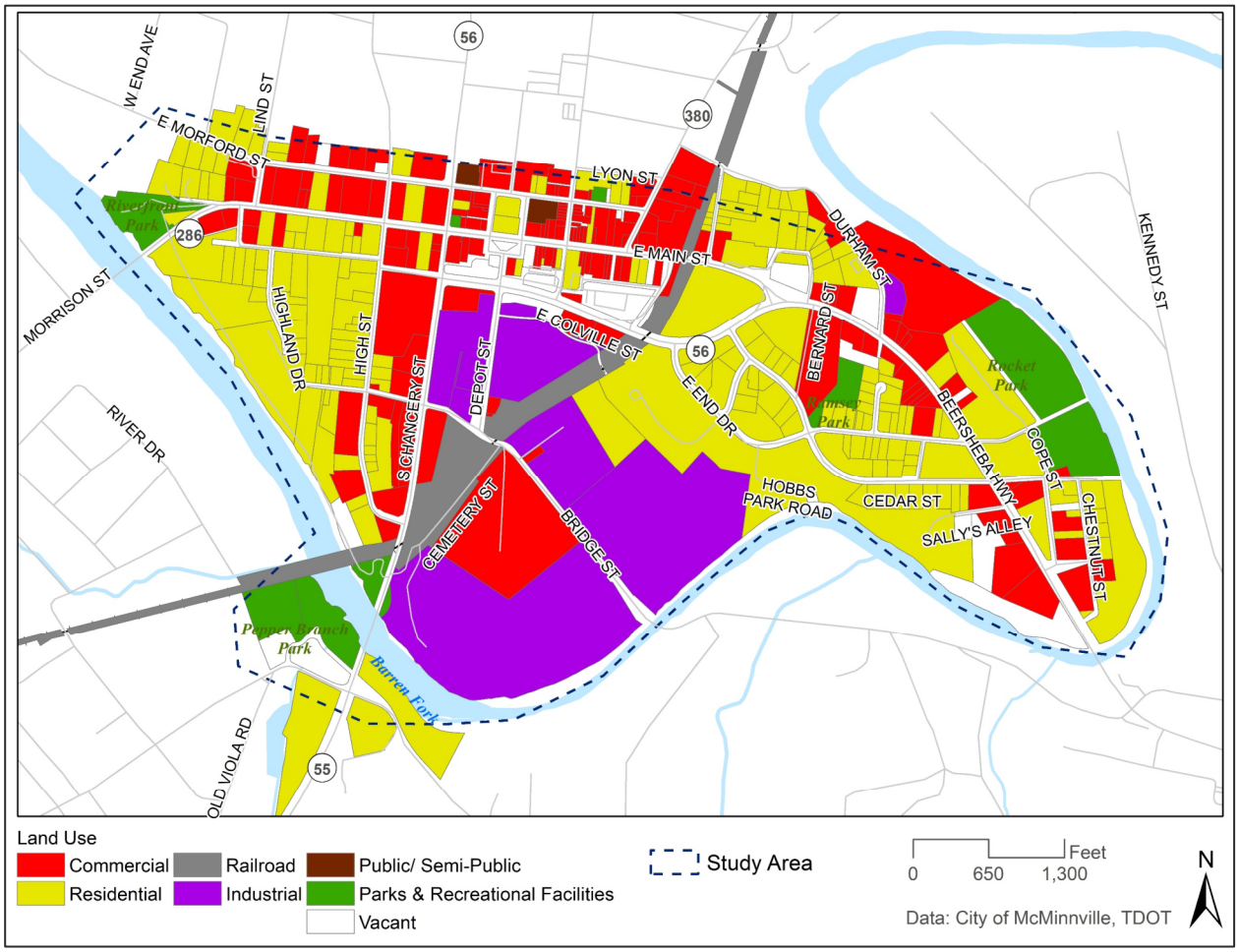
The parcel data for McMinnville was analyzed and the summary of existing land uses for the study area is shown in Table 7. Land use classifications were made by combining individual land uses together into groups. The existing land use map for the study area is shown in Figure 8. Almost 65 percent of the parcels within the study area were classified as either commercial or residential land use.

Table 7 – City of McMinnville Land Use Analysis

Land Use	Parcels	Acres	Percent
Commercial	165	137.29	23%
Industrial	7	107.14	18%
Parks and Recreation	7	37.86	6%
Public/Semi-Public	2	1.85	1%
Residential	199	226.26	39%
Transportation	2	48.10	8%
Vacant	25	28.06	5%
TOTALS	**407**	**586.56**	**100%**

Source: City of McMinnville Parcel Data

Figure 8 – City of McMinnville Existing Land Use Map

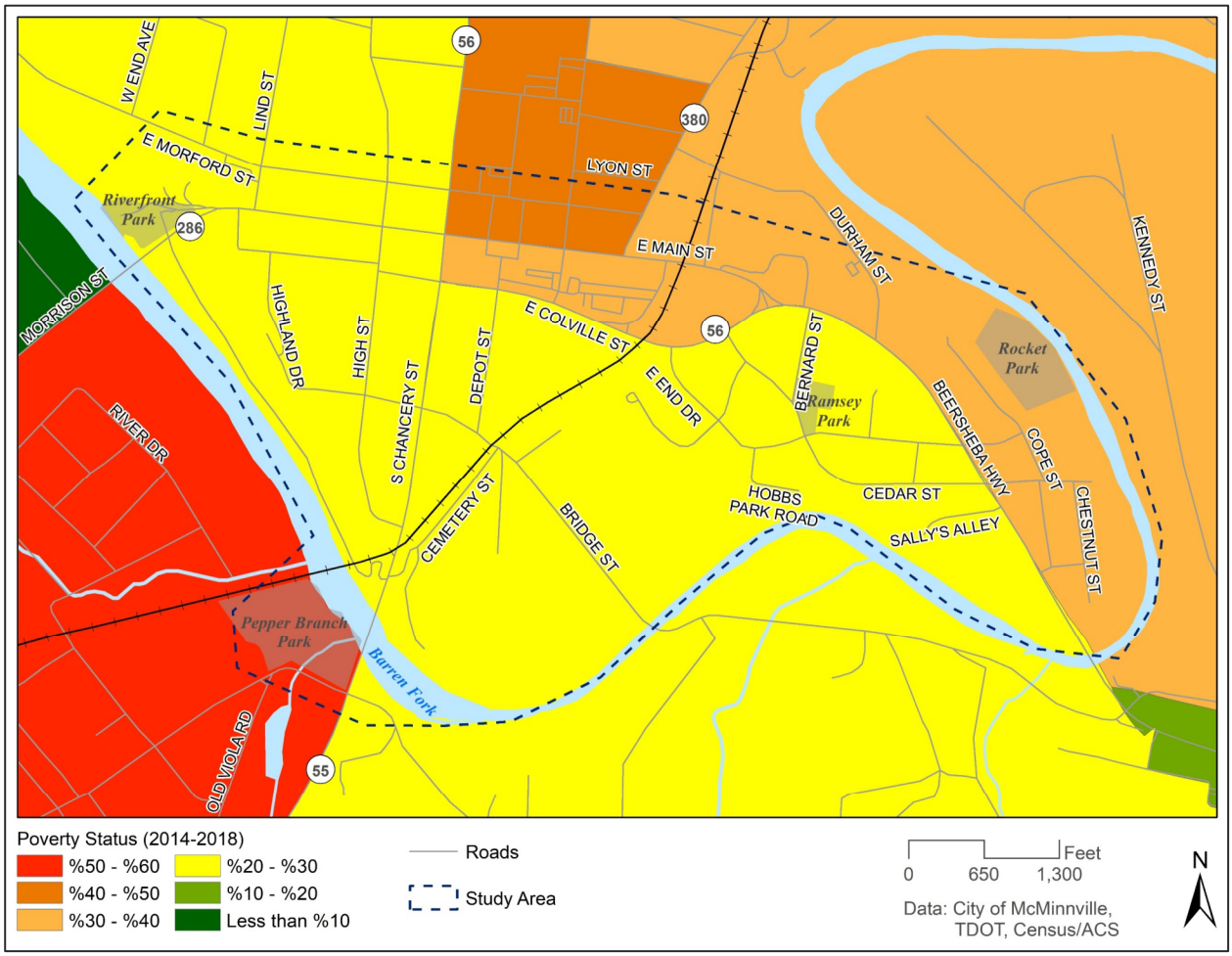


Low Income/Poverty Areas

A review of the low-income areas, or those under the poverty line, was also conducted within the study area. Data on poverty status was collected from the U.S. Census Bureau and mapped by census tract. The results are shown in Figure 9.

The map shows that the entire study area is comprised of 20-60 percent of people living under the poverty line. This indicates that this area is a good candidate for non-motorized improvements.

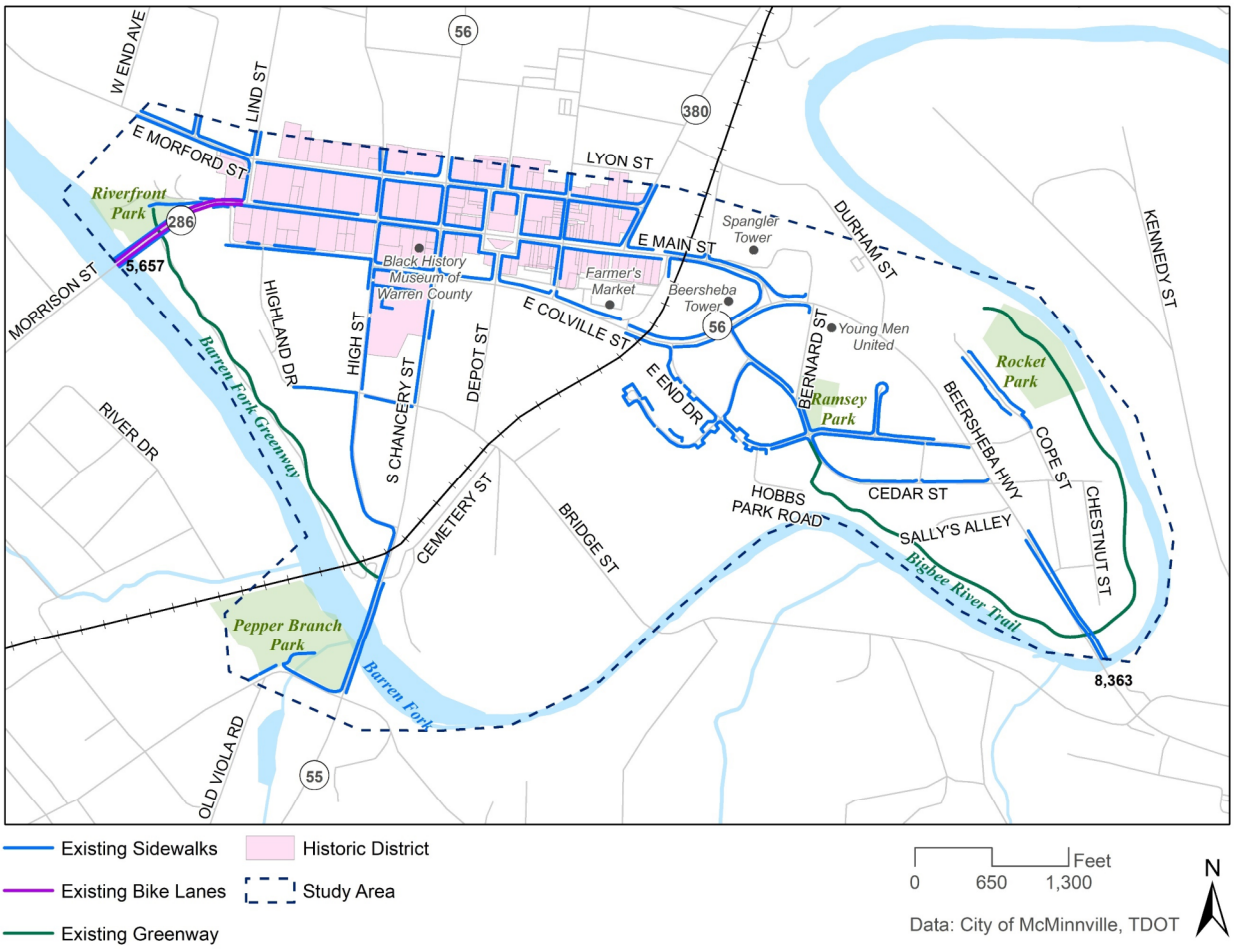
Figure 9 – City of McMinnville Poverty Status by Census Tract



Places of Interest

There are many places throughout McMinnville which are important to people who live and visit the city from an economic, civic, or cultural standpoint. While every city is different, each one typically has places that people tend to gather around or find important. Understanding where those points of interest are located is important when trying to provide multiple means of transportation options to and from these places. Figure 10 shows civic institutions, parks, and other places of interest within the study area.

Figure 10 – City of McMinnville Places of Interest



Recent Plans and Studies

There have been several planning studies conducted over the past years which may impact how non-motorized infrastructure should be planned and prioritized throughout the study area and the surrounding region. A brief review of these studies was conducted to better understand the key points and how they may apply to this Master Plan.

Safe Streets to Schools Bicycle and Pedestrian Plan

The City of McMinnville is currently working on a Safe Streets to Schools Bicycle and Pedestrian Plan to address issues with those networks and how they connect people to the local schools. This project kicked off in early January 2021 and is scheduled to be completed in July 2021. There are a total of seven major destinations that are being reviewed as part of this effort, all of which are outside of the study area of this Master Plan study. Some preliminary findings show that not all these destinations are connected well and thus have room for improvement. Specifically, the bike lane network is sparse and there is a need to create this type of infrastructure.

McMinnville Adventure Tourism Plan (March 2018)

In March 2018, the City of McMinnville, along with other relevant stakeholders developed a plan for promoting tourism in the city and surrounding areas. Options such as hiking, bicycling, horseback-riding, white-water rafting, etc. were just some of the options that were discussed and explored as part of this plan. Some of the important points were the fact that the area has much to offer those who seek a more active type of tourism. There are numerous hiking trails in the area, bicycling options, and rivers for people to explore and enjoy. The Barren Fork River is a major asset through downtown McMinnville, as it bounds the study area and can be accessed via boat at Riverfront Park, Pepper Branch Park, and Rocket Park.

The plan also mentions some of the demographic trends and shifts throughout the country and how this type of tourism may be of interest to millennials who are beginning to take vacations. It mentions that specific attention should be paid to these age groups if they want to grow further and expand their options. One final note was that the amount of money that tourism is bringing into the county has been increasing between 2013 and 2016. The trails and amenities that the city has to offer the region are numerous, so further investment in these areas would be beneficial.

ADA Transition Plan (November 2019)

Americans with Disabilities Act (ADA) Transition Plans are a federally mandated requirement by Title II (State and Local Government). The purpose of this document is to ensure that people with disabilities are not being discriminated against when public facilities are built or designed by creating a planning framework to identify any potential barriers. The City of McMinnville completed their ADA Transition Plan in November 2019. The plan includes two major components: the self-evaluation and assessment and the transition Plan.

The self-evaluation and assessment reviewed seven public buildings and inventoried the existing sidewalks to determine what barriers there may be in these areas. Four priorities were used as part of this evaluation and assessment: accessible approaches and entrances, access to goods and services, access to public restrooms, and access to other items such as water fountains and telephones. One key finding from this first component was that several of the public buildings were undergoing renovations to address ADA compliance issues. A sidewalk inventory was also conducted in 2018, which indicated that much of the sidewalk within the city needed to be upgraded to comply with ADA standards.

The transition plan notes how to address the issues found within the self-evaluation and assessment. The implementation schedule and costs are noted in Table 8.

Table 8 – City of McMinnville ADA Transition Plan Implementation Schedule

Fiscal Year	Project	Estimated Cost
2020-2021	Civic Center renovation	$1,500,000
	City Hall elevator	$250,000
	3 new restrooms at city parks	$200,000
	Sidewalk repairs – Sparta Street multi-modal grant	$997,980
2021-2022	Parking lot and curb repairs	$200,000
	Sidewalk repairs	$100,000
	Hwy 70S crosswalk project	$600,000
2022-2023	New McMinnville Police Department	$4,000,000
2023-2030	City Hall renovation	$2,000,000
	Sidewalk/curb ramp replacement	$100,000
	Rocket Park restroom ADA improvements	$125,000
2030-2040	McMinnville Fire Department Station #1	TBD
	McMinnville Police Department	TBD
	McMinnville Public Works Facility	TBD
	McMinnville Wastewater Treatment Plant	TBD
	McMinnville Water Treatment Plan	TBD
	McMinnville Fire Department Station #2	TBD

Source: City of McMinnville ADA Transition Plan

Warren County-McMinnville Comprehensive Strategic Plan (November 2018)

In November 2018, the Upper Cumberland Development District developed a Comprehensive Plan for Warren County/McMinnville. The purpose of this plan was to develop a series of goals for five key areas that were found to influence the growth of the region. Those key areas were jobs and economic development, fiscal strength and efficient government, public safety, education and workforce development, and finally health and welfare.

The two areas most useful to this bicycle pedestrian plan focus on public safety and health and welfare. The public safety section notes that the downtown area has several features which may not be amenable to non-motorized transportation and need further study: parking and one-way streets. There is currently adequate parking in the downtown area, but it is not located in areas that visitors would be aware of. One potential solution is to include wayfinding or better signage for those in the area. One-way streets were also mentioned as a potential issue, as they can be confusing to navigate. The key issue presented in the health and welfare section was better connectivity for parks throughout the region. By connecting the parks with more trails and greenways in the area, there will be better travel and recreational options for visitors.

Downtown McMinnville Master Plan (2001)

In 2001, the City decided to develop a Downtown Master Plan to revitalize their downtown to make it more accessible and vibrant. This plan focused on how this area should look and feel, as well as how it can better serve the residents of McMinnville. The plan noted many of the same issues mentioned in other plans: inadequate sidewalk coverage, sidewalks in need of repair, and the need for more crosswalks and non-motorized infrastructure in general.

McMinnville Land Use and Transportation Policy Plan with Community Facilities Element (2002-2020)

In October 2001, the McMinnville Regional Planning Commission developed a long-range development plan to assist with the future planning of the city. This comprehensive document reviewed the current zoning, land uses of the entire area, and demographic factors to forecast population growth. The plan forecasted that the population growth in the area would be around 14,700 people by 2020, which overestimated by approximately 1,000 people. Several factors could have influenced this difference such as the economic impacts of recessions and changes in needs from industry.

Existing Roadway Characteristics

The transportation network in McMinnville consists mainly of streets and roads that connect the town's residents to their homes, businesses, parks, schools, and other destinations in the region. There are several main roadways within McMinnville:

- SR 286/Morrison Street – east/west connection that becomes SR 380/Main Street through downtown
- SR 55/SR 56/Chancery Street – north/south connection through downtown
- SR 56/Colville Street – east/west connection that connects downtown to the east part of town

This section provides a review of the existing roadway characteristics that impact how comfortable and safe non-motorized users feel. The amount of traffic on a roadway is a significant factor to consider when determining what types of facilities to include alongside the roadway. By looking at historical crash data, trends can be analyzed to determine what types of improvements could be made to make the roadway safer.

Existing Traffic Volumes

The TDOT traffic count stations within the City of McMinnville were evaluated to understand the traffic trends within the study area. There are 11 count stations located within the study area and are shown in Figure 11. The traffic is reported in terms of daily volumes and are summarized in Table 9. The historical traffic data between 2014 and 2018 was analyzed to determine the annual growth rate of traffic. Most of the count stations indicate there was an increase in traffic from 2014 to 2018, with an average annual growth rate of 3.71 percent. Three count stations showed a decrease in traffic over the 5-year period: SR 56/Beersheba Highway, SR 56/E Colville Street, and SR 55/S Chancery Street. The SR 380/E Main Street and SR 380/E Morford Street volumes show high growth rates between 2014 and 2018, however, these volumes have lowered back down to 2017 volumes over the past two years.

Figure 11 – Existing (2018) Annual Average Daily Traffic Volumes

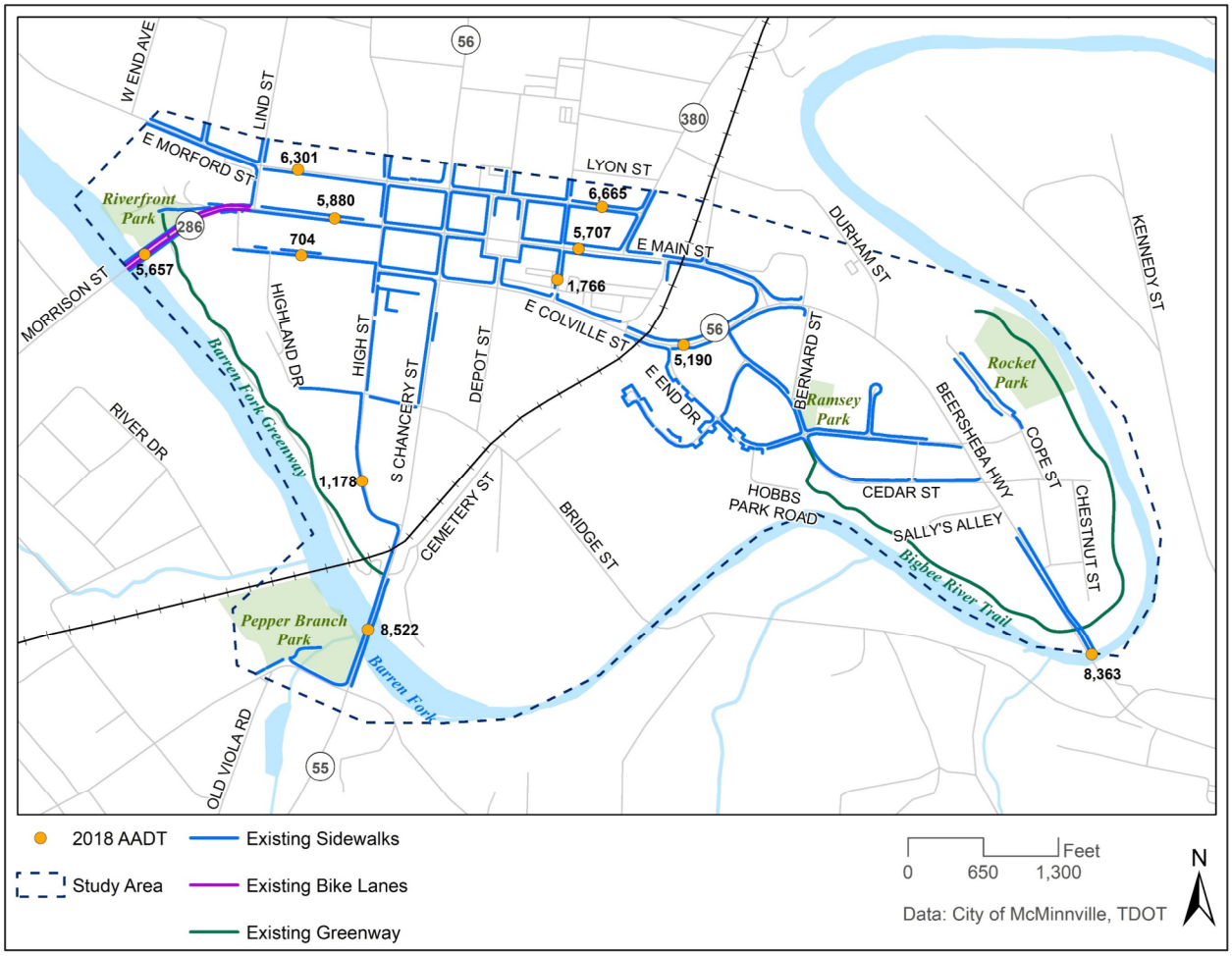


Table 9 – Annual Average Daily Traffic Volume Five-Year Summary (2014-2018)

Station #	2014	2015	2016	2017	2018	Annual Growth Rate
Beersheba Hwy	9,108	8,517	8,636	8,650	8,363	-2.11%
E Colville St	5,696	5,454	5,668	5,825	5,190	-2.30%
S Chancery St	9,028	10,832	10,940	9,703	8,522	-1.43%
S High St	1,157	1,231	1,243	1,194	1,178	0.45%
Morrison St	4,897	5,241	5,067	6,070	5,657	3.67%
W Colville St	529	580	585	600	704	7.41%
N Spring St	1,314	1,483	1,497	1,498	1,766	7.67%
E Main St	3,656	4,601	4,636	4,972	5,707	11.78%
W Main St	4,890	5,749	5,127	5,146	5,880	4.72%
E Morford St	5,003	5,982	6,041	4,007	6,665	7.43%
W Morford St	5,493	6,139	6,200	5,763	6,301	3.49%

Source: TDOT Traffic History

Vehicular and Non-Motorized Crash Data

Crash data were collected for the study area within the City of McMinnville using TDOT's Enhanced Tennessee Roadway Information Management System (E-TRIMS). The most recent and complete 5-year data set (2016-2020) was analyzed. The details from the crash reports were reviewed to accurately understand the crash results.

A total of 362 crashes were reported during the 5-year analysis period from 2016 to 2020. Figure 12 shows the locations of the crashes within the study area. The highest number of crashes occurred on SR 380/Main Street and SR 380/Morford Street through downtown McMinnville.
Table *10* shows a breakdown of the types of crashes that occurred in the study area. The most common crashes within the City were angle (approximately 42 percent) and rear end collisions (approximately 20 percent).

Figure 13 shows the crashes that occurred at intersections. The intersections with the highest density of crashes are along SR 55/SR 56/Chancery Street at SR 56/E Colville Street, SR 380/Main Street, and SR 380/Morford Street. These intersections would be good candidates for improvements that would benefit vehicular and non-motorized users.

Figure 12 – City of McMinnville Vehicular Crashes by Crash Type (2016-2020)

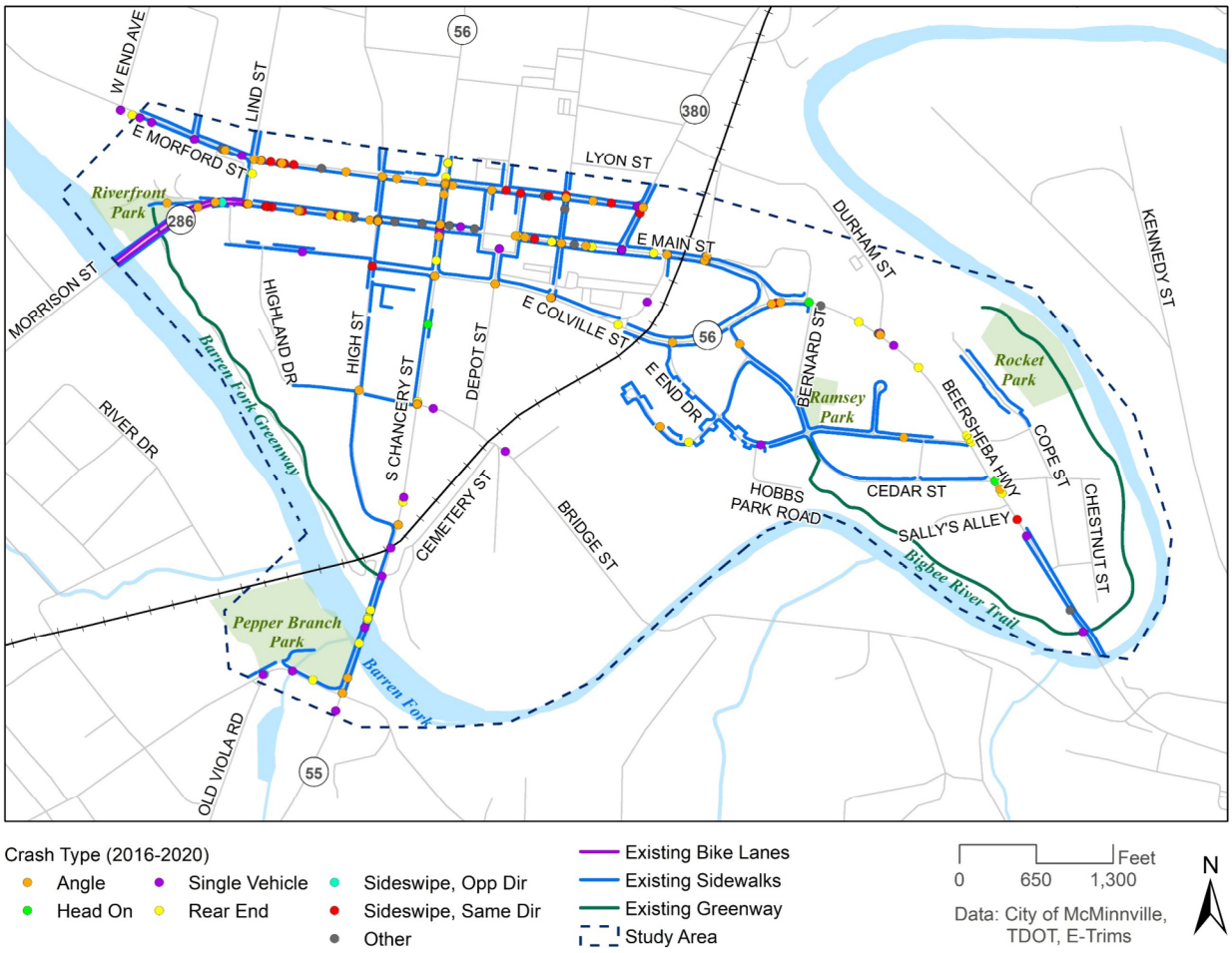
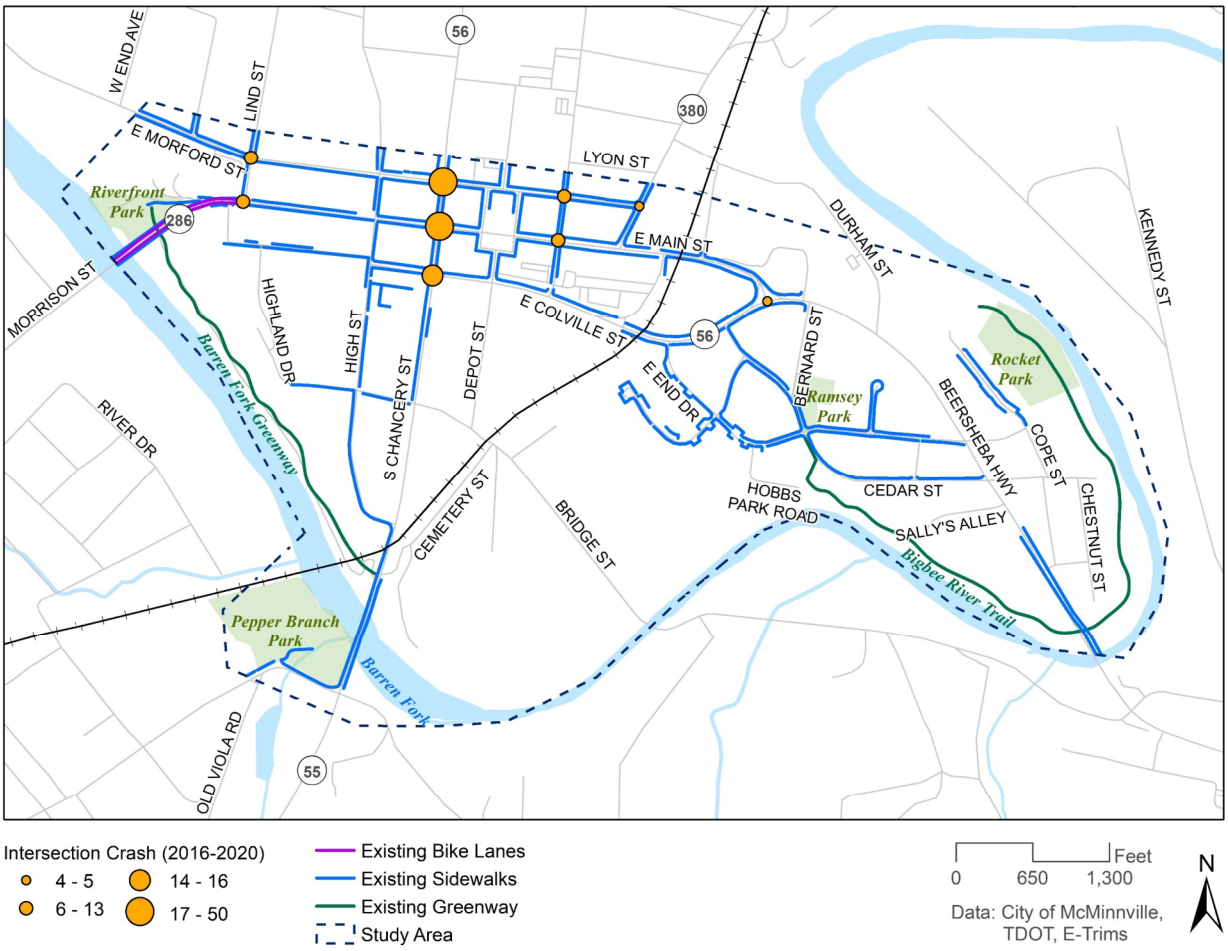


Table 10 – City of McMinnville Crashes by Type (2016-2020)

Type of Crash	Number of Crashes	Percentage of Crashes
Angle	151	42%
Head on	8	2%
Single vehicle	51	14%
Rear end	73	20%
Sideswipe, opposite direction	10	3%
Sideswipe, same direction	43	12%
Other	26	7%
TOTAL	**362**	**100%**

Source: TDOT E-TRIMS

Figure 13 – City of McMinnville Vehicular Crashes – Intersection Crashes (2016-2020)



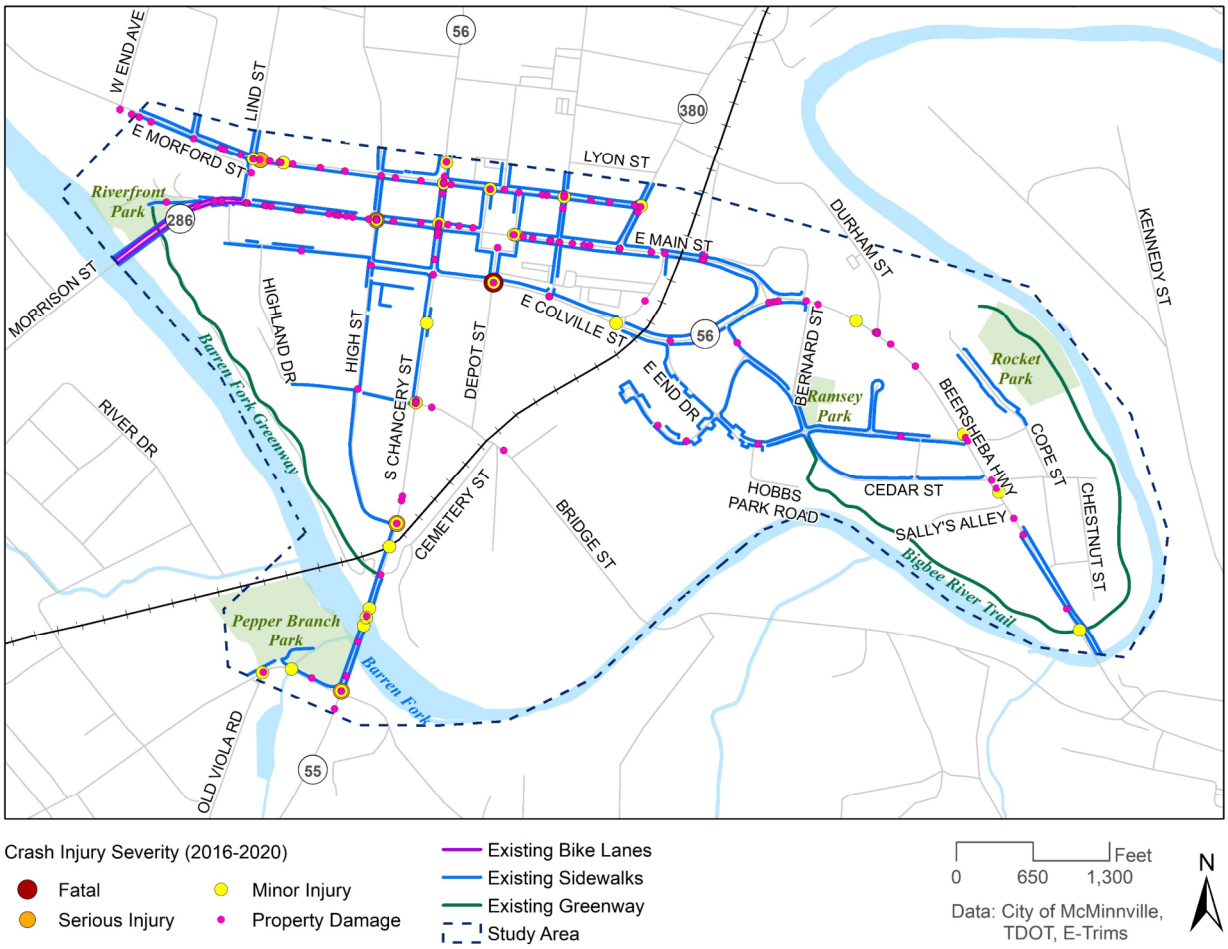
Of the 362 crashes that occurred in the 5-year analysis period, 311 crashes (86 percent) resulted in property damage only. One fatality occurred during this time period at the intersection of SR 56/E Colville Street and Depot Street. The crash occurred between a motor vehicle and a motorcycle during daylight and clear conditions. The driver was not impaired or distracted during the event. There were four serious injury crashes and 46 minor injury crashes. Table 11 summarizes the crash data by severity and Figure ***14*** shows the locations of the crashes, categorized by severity.

Table 11 – City of McMinnville Crashes by Severity (2016-2020)

Injury Severity	Number of Crashes	Percentage of Crashes
Fatal injury	1	1%
Serious injury	4	1%
Minor injury	46	12%
Property damage	311	86%
TOTAL	**362**	**100%**

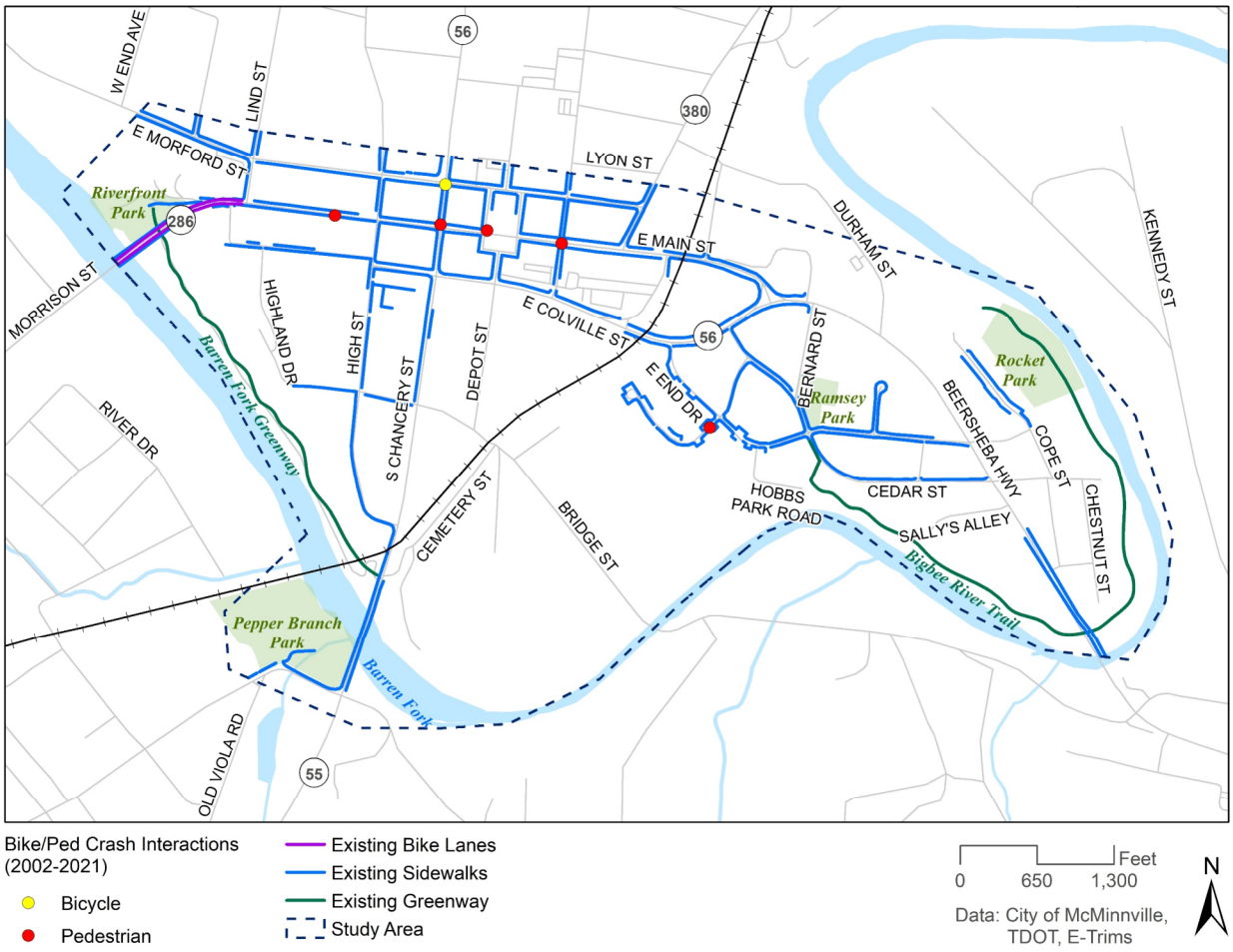
Source: TDOT E-TRIMS

Figure 14 – City of McMinnville Vehicular Crashes by Severity (2016-2020)



No bicycle and/or pedestrian crashes occurred during the 5-year analysis period. Additional years of crash data were analyzed for more bicycle and pedestrian occurrences. Six bicycle and pedestrian crashes occurred dating back to 2002. Most of those were pedestrian crashes which occurred on SR 380/Main Street in the vicinity of an intersection. The crashes were mostly during daylight and clear weather conditions. Evidence from the crashes showed that there was no single cause that could link the crashes, but rather all crashes individually were different in nature. The bicycle and pedestrian crash locations are shown in Figure 15.

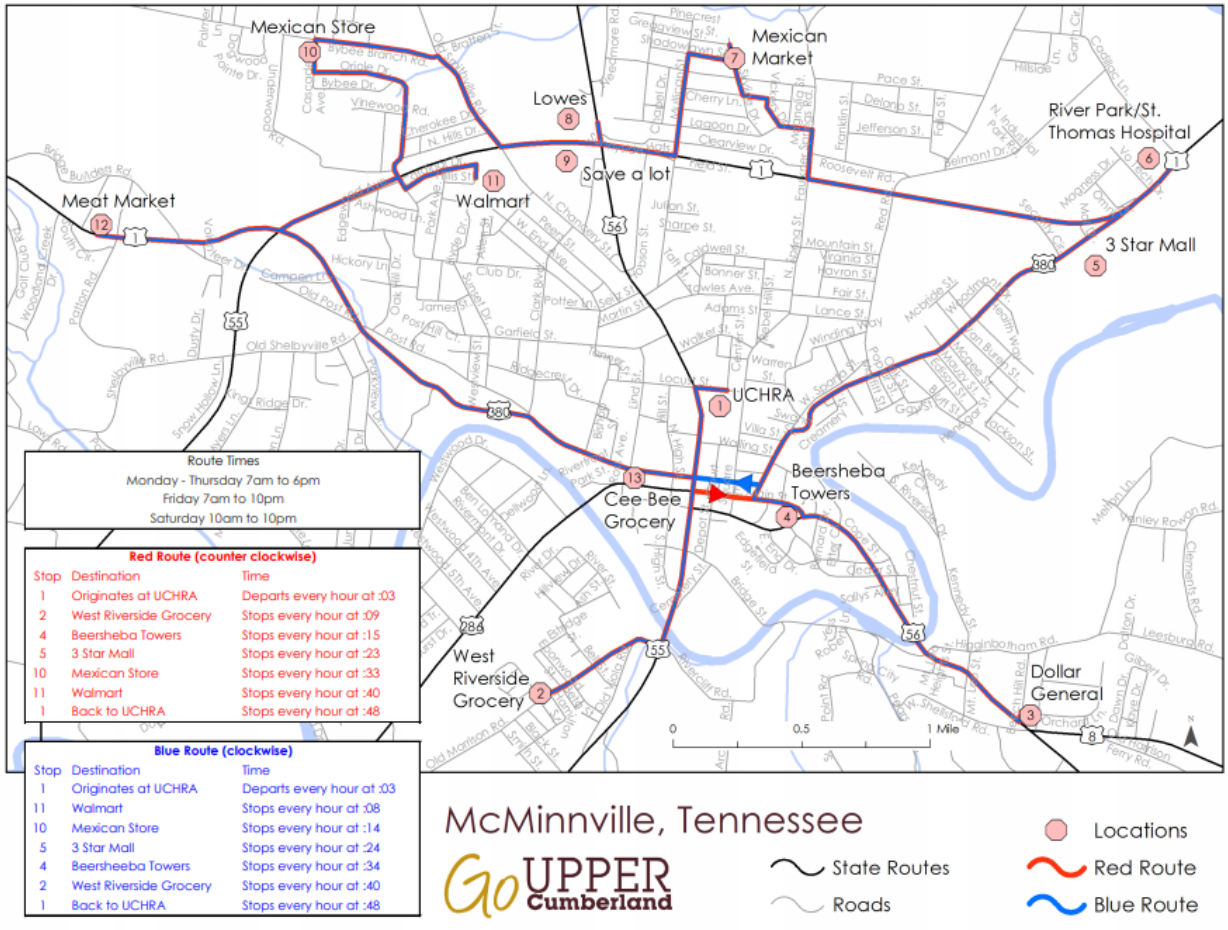
Figure 15 – City of McMinnville Non-Motorized Crashes (2002-2016)



Existing Transit

The City of McMinnville has an existing transit network that serves patrons in the city. The network uses major roadways throughout the city, including US 70S Bypass, SR 55, SR 56, SR 286, and SR 380. The service operates as a circulator in the clockwise and counterclockwise directions. Each route runs once every hour and the schedule and stop locations are shown in Figure 16. There are two stops located within the study area, one located near the Cee-Bee grocery store on SR 380/W Morford Street, and another located off of SR 56/E Colville Street near the Beersheba Towers housing development.

Figure 16 – City of McMinnville Transit Service Map



Existing Bicycle and Pedestrian Facilities

The City of McMinnville has numerous roadways, some of which have bicycle and pedestrian infrastructure, but there are several key areas throughout the city where this is missing. Without a connected network of sidewalks and/or bike lanes, these modes of transportation are much more difficult to utilize fully. The main roadways within the project study area were reviewed to determine which have existing bicycle or sidewalk infrastructure, as well as what areas within the city have greenways. Additionally, the existing parks and recreational facilities in the city were reviewed to determine where there may be potential gaps in the non-motorized network in relation to these facilities.

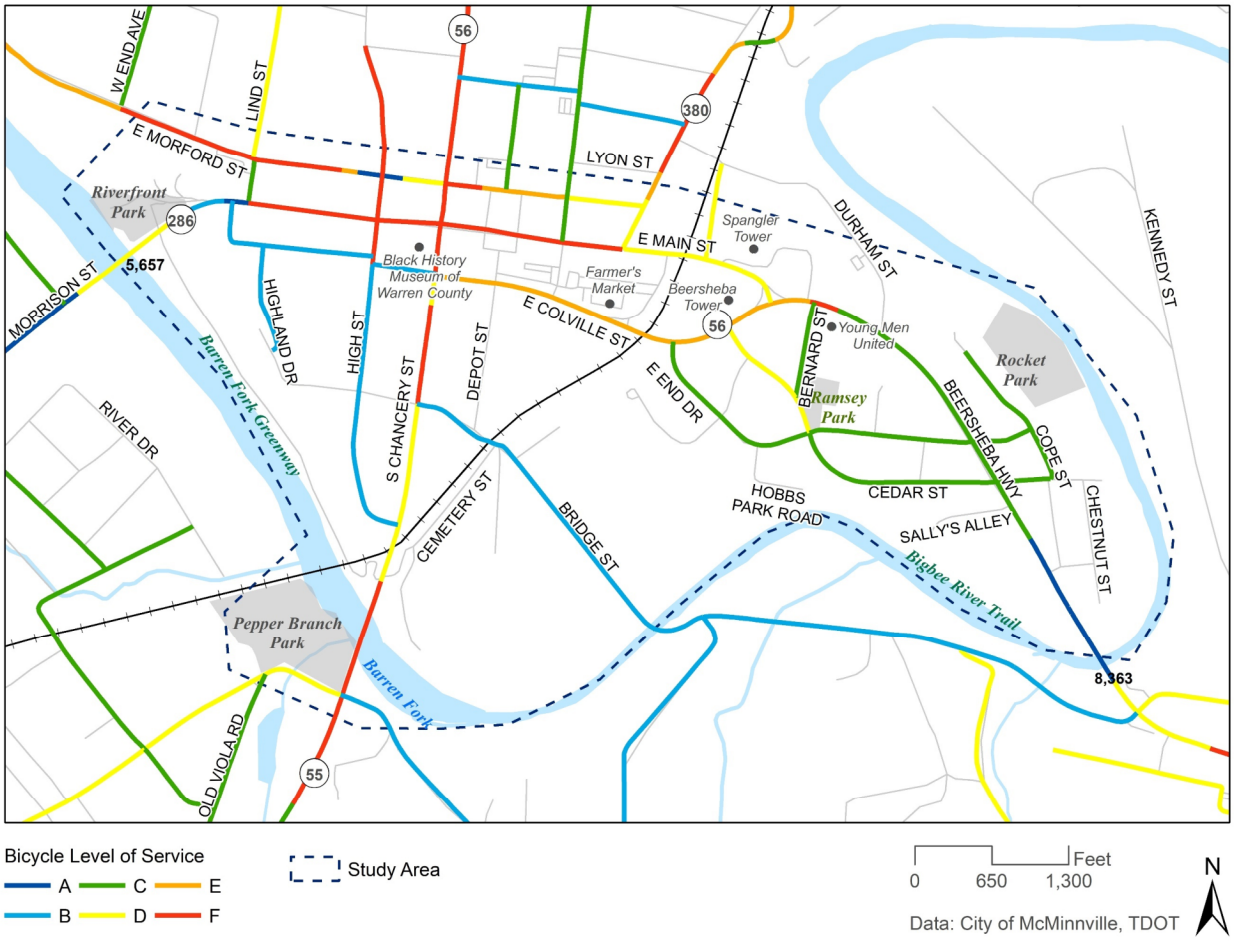
Existing Bicycle Infrastructure

Typically, bicycle infrastructure consists of bike lanes, shared use pathways, or other types of trails. While these may serve different purposes, they are all nonetheless important. Within the study area, there are few bike lanes, so anyone who currently rides a bicycle must use the street network or greenways. Outside of the downtown area, there are paved shoulders people can utilize. For example, SR 55/S Chancery Street consists of two lanes and paved shoulders but no dedicated bicycle infrastructure.

There is no bicycle infrastructure to connect the east and west sides of the study area to one another. SR 56/E Colville Street does not have any bike lanes, nor do the one-way pair streets through downtown: SR 380/Main Street and SR 380/Morford Street.

The bicycle advocacy group, Bike McMinnville, created a bicycle level of service (BLOS) inventory for the local roads in McMinnville to supplement the State BLOS map that TDOT published. BLOS is a measure of how comfortable a bicyclist feels riding on the road. Bike McMinnville used the BLOS calculator provided by Ride Illinois, which is based on the methodology provided in the Highway Capacity Manual. Factors that impact a roadway's BLOS designation. These include: number of lanes, width of the lanes, whether there is a paved shoulder or striped bike lane, traffic volumes, speed limit, percentage of heavy vehicles, pavement condition, and the presence of on-street parking. Figure 17 shows the BLOS for the streets within the study area. Although there are no bike lanes on them, many of the local roadways show BLOS C or better, likely due to the low speeds and low traffic volumes. Roadways with a BLOS of D or worse typically have high motorized vehicle speeds, volumes, and truck percentages. These conditions are not perceived as safe by most cyclists and can be a deterrent to cycling.

Figure 17 – City of McMinnville Bicycle Level of Service



Existing Sidewalk Infrastructure

As mentioned previously, the City of McMinnville recently completed a sidewalk inventory of the area to review the conditions of their sidewalks and to find where there may be gaps or repairs to be made. There are several sections of roadway that have little to no sidewalk infrastructure and some of the sections that do have sidewalks need to be repaired or redesigned to bring them up to ADA standards. The streets within the study area that need repair are summarized in Table 12.

Table 12 – City of McMinnville Sidewalk Conditions

Street	Sidewalk Length (ft)	Sidewalk Repair Length (ft)	Obstructions
East End Drive	4,710	320	0
E Main Street	3,605	80	3
Cedar Street	2700	65	0
Beersheba Hwy	4,220	20	0
Depot Street	1200	255	2
S High Street	2220	365	4
E Colville Street	135	90	0
W Colville Street	2260	755	5
W Main Street	7805	845	22
S Chancery Street	2935	35	0
Morford Street	4000	0	0
TOTAL	35,790	2,830	36

Source: City of McMinnville Sidewalk Inventory (2018)

Existing Greenways

The City of McMinnville has two trails within the study area that residents can frequent and enjoy. One is the Barren Fork Greenway, which is a paved greenway that connects the Riverfront Park to SR 55/S Chancery Street north of Pepper Branch Park. This greenway was developed recently and provides an important recreational connection. The Bigbee River Trail is a dirt path that follows the Barren Fork River and connects Rocket Park to Ramsey Park, a 2.1-mile round trip.

Strava Data

When planning for non-motorized infrastructure, it is important to review where these users are currently traveling. It is important to note which roadways users tend to avoid and which paths users prefer.

Crowd-sourcing data is one way that planners look for important information from people in local areas, and one key data source is Strava. This company can utilize the GPS tracking from smartphones and collect information on where cyclists travel when users log their rides through the app. TDOT has a partnership with Strava and the available data were reviewed as part of this plan. It should be noted that the sample size for this data is rather small, so these inferences should be validated with further

study. Another limitation of this data is that the app is mostly used for recreational riding and not for short destination trips.

After reviewing the Strava data from the past year, shown in Figure 18, several key points were gleaned to help understand which routes are preferred by cyclists. The first is that the previous two years (May 2019 – April 2021) shows that bicyclists traveling from south to north from Morrison Street to Sparta Street use SR 380/Main Street and SR 380/Morford Street. This is important because it shows that both SR 380/Main Street and SR 380/Morford Street are being utilized and thus may require improvements. Currently, there are paved shoulders and sidewalks along SR 380/Morford Street, but SR 380/Main Street does not have any paved shoulders, though it does have sidewalks. Also, there are a significant number of bicyclists traveling along Morrison Street, portions of W Colville Street, S High Street, SR 55/S Chancery Street, and the Barren Fork Greenway. It is possible that bicyclists are traveling to the greenway and parks in this area as their destinations. Adding greater connectivity to these parks with additional trails or facilities will be important.

Figure 18 – City of McMinnville Strava Heat Map

Source: Strava Metro Data

Existing Parks and Recreation Facilities

The City of McMinnville has several parks and other facilities that may be of interest to those who walk or bicycle. It is important for a city to have parks, not only for those who visit the area or are passing through, but also for people who live in the area. Having sufficient park space is important from a public health perspective. Figure 19 shows the various parks that are available within McMinnville, which range in size

and amenities. The existing parks have some connections to the rest of the city via sidewalks but would benefit from additional non-motorized connections such as bike lanes or shared use paths.

Figure 19 – City of McMinnville Parks

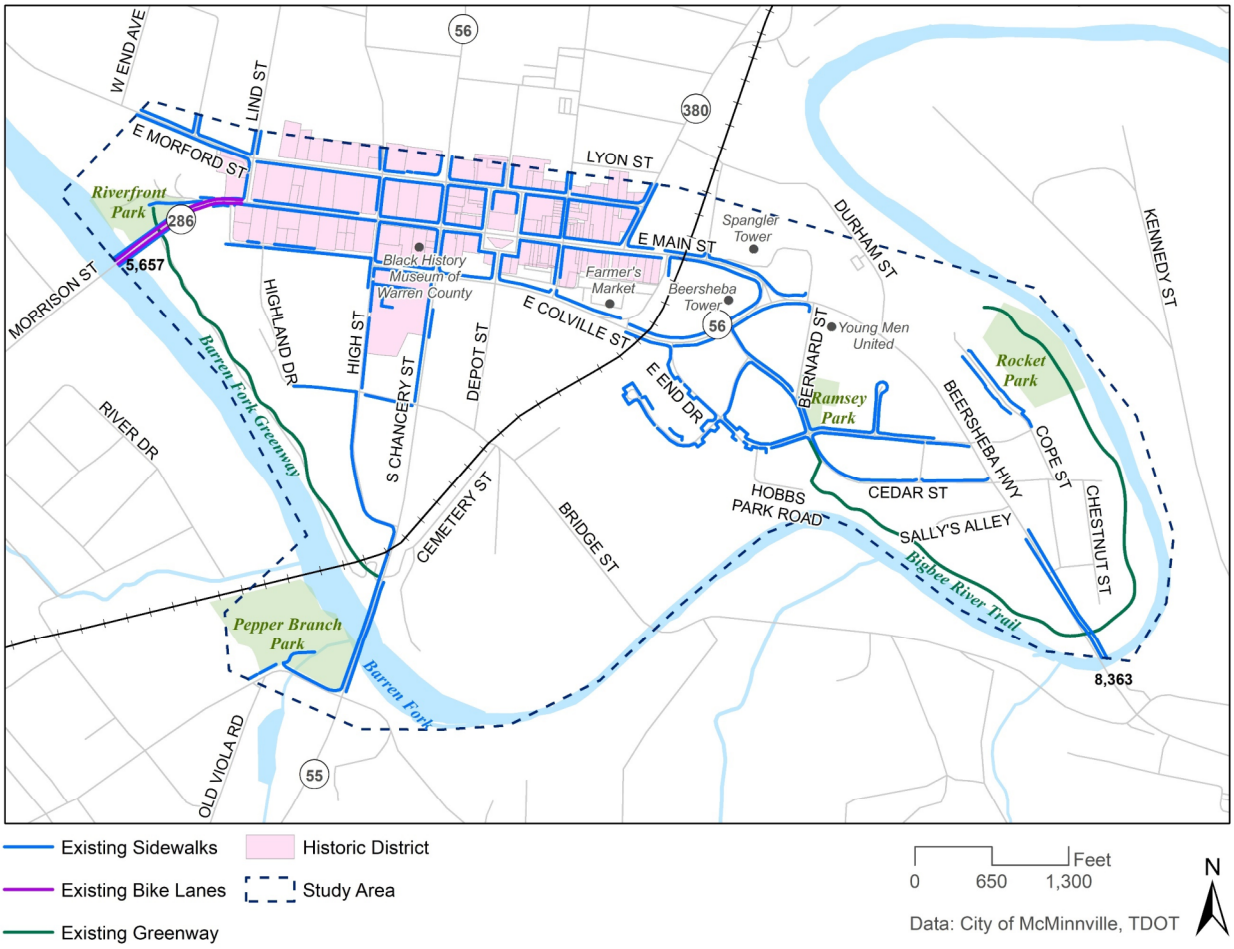


Figure 20 – Riverfront Park

Riverfront Park is located on the Barren Fork River and connects to the downtown area via SR 380/W Main Street. Riverfront Park has several amenities such as benches, bike racks, a water fountain, a bike repair station, charcoal grill, and public restrooms. There is a large pavilion with several picnic tables. The Barren Fork Greenway trailhead is located on the south side of the park. There is also playground equipment available, a sand volleyball court, and a boat slip.

Figure 21 – Riverfront Park

Pepper Branch Park is another park within McMinnville along the Barren Fork River. This park is accessible via Old Morrison Road from SR 55/S Chancery Street. Neither of these streets has bike lanes, but they do have some sidewalk coverage. Pepper Branch Park is equipped with public restrooms, bike racks, a small gazebo, and benches. There is a disc golf course, rock climbing wall, and a walking trail with various exercise equipment and pet waste stations along it.

Figure 22 – Pepper Branch Park

Ramsey Park is located on East End Drive at the E Main Street and Bernard Drive intersection. There are sidewalks along East End Drive and E Main Street available for pedestrians to access the park. Although it is the smallest park in area, it has a basketball court, public restrooms, a pavilion with picnic tables, playground equipment, benches, a charcoal grill, and a pet waste station.

Figure 23 – Ramsey Park

Rocket Park is located on the Barren Fork River off Cope Street. Access to the Bigbee River Trail, a 2.1-mile round trip dirt trail, is available at Rocket Park. There is a baseball field, a basketball court, playground equipment, and covered picnic tables with a charcoal grill provided. There is also a boat slip for access to the Barren Fork River.

Figure 24 – Rocket Park

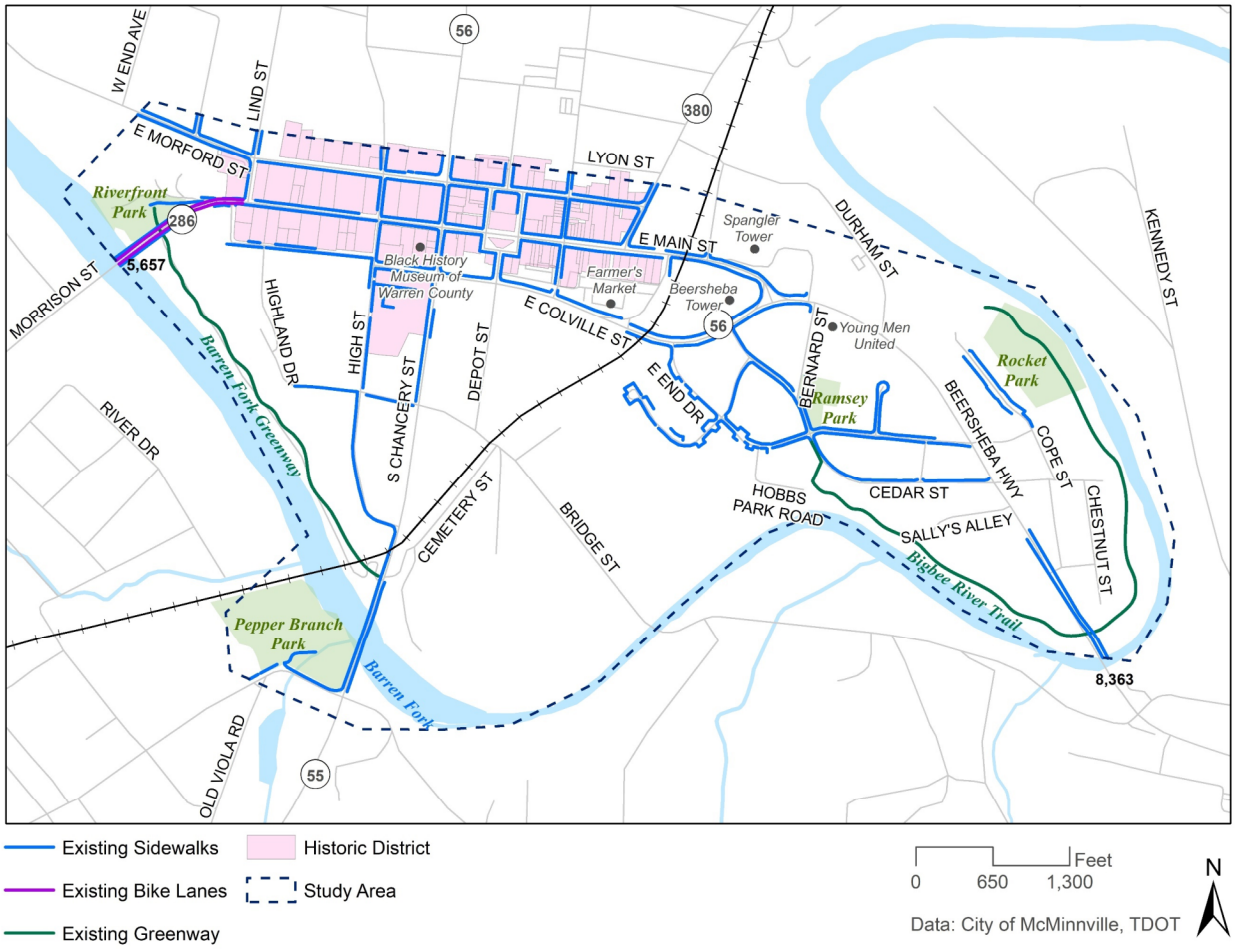
Needs Identification

The Existing Conditions analysis paints a picture of the current environment within the study area. From here, needs that will help to complete the non-motorized infrastructure network can be identified. The following sections detail the opportunities that McMinnville should consider when deciding how to improve their non-motorized facilities.

Gaps in the Existing Network

The first place to start for a needs' assessment is to determine where there are existing gaps in the network. Figure 25 displays the existing sidewalk and bicycle infrastructure.

Figure 25 – City of McMinnville Existing Non-Motorized Infrastructure



The only painted bike lanes within the study area are located along Morrison Street, west of downtown. The Barren Fork Greenway currently connects River Front Park to the trailhead off SR 55/S Chancery Street. From here, users must cross the Barren Fork River via SR 55/S Chancery Street to access Pepper Branch Park. The Bigbee River Trail is located on the east side of the study area and is a dirt trail that parallels the Barren Fork River and connects Rocket Park to Ramsey Park for a total round trip distance of 2.1 miles. There is an obvious gap in the trail network between the Barren Fork

Greenway and the Bigbee River Trail. The City of McMinnville should consider connecting these trails with a greenway that follows or at least parallels the river.

In general, the sidewalk network within the study area provides very good coverage. There are some gaps that the City should consider filling:

- South side of SR 56/E Colville Street
- Both sides of SR 56/Beersheba Highway from Bernard Street to south of Sally's Alley
- SR 55/S Chancery Street
- Both sides of Durham Street
- Both sides of Depot Street
- South side of SR 380/E Main Street/Morrison Street from bridge over Barren Fork River to existing sidewalk
- Both sides of S High Street where missing
- North side of SR 380/E Morford Street between Lind Street and High Street
- Both sides of East End Drive between SR 56/Beersheba Highway and Cope Street
- Both sides of W Colville Street south of Morrison Street
- East side of Bernard Street

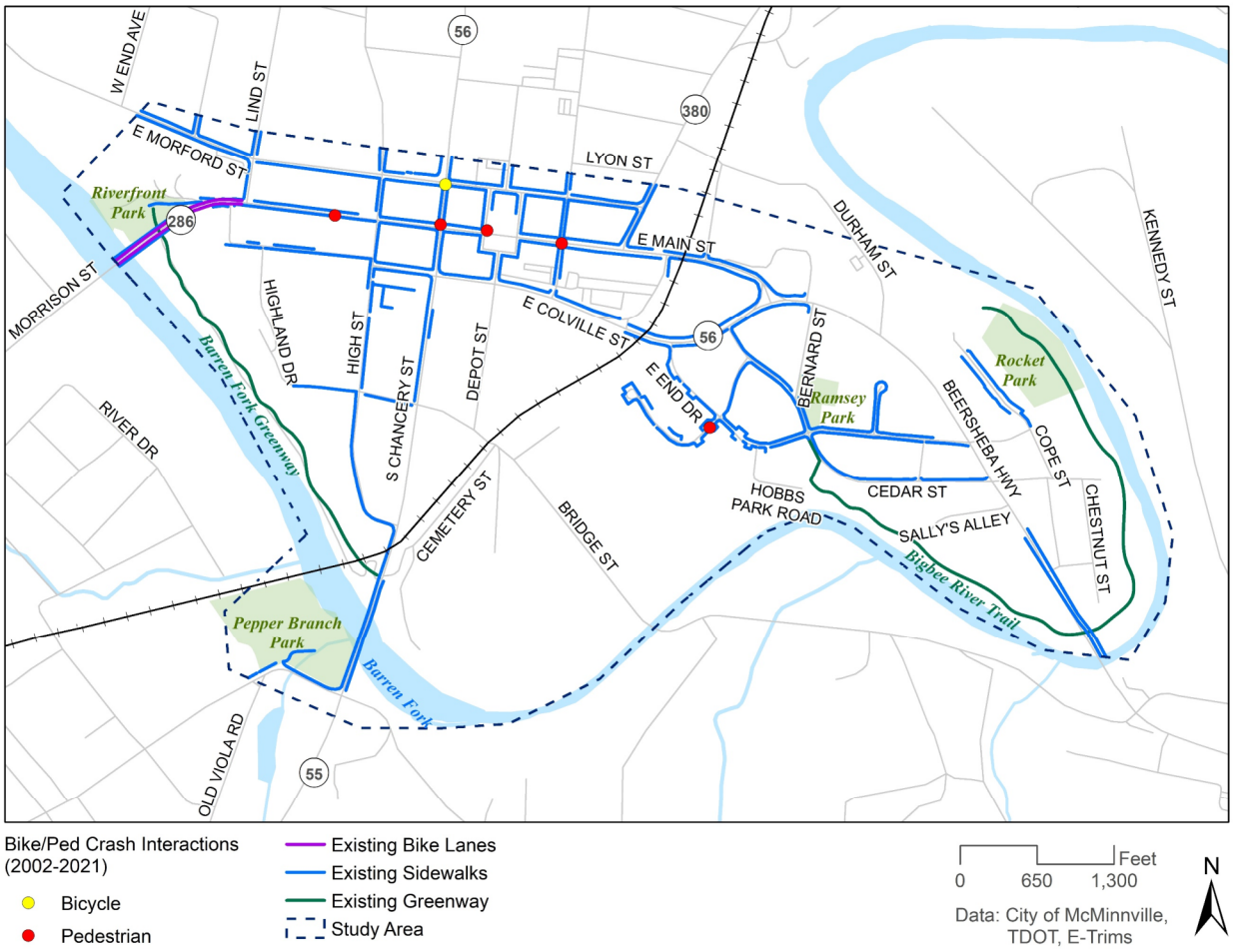
Crash Hot Spots

As discussed in the crash analysis, six crashes occurred between 2002 and 2020 that involved bicycles or pedestrians. Four of the pedestrian crashes happened along SR 380/E Main Street at intersections, as shown in Figure 26.

According to the crash data, the intersections with the highest density of motor vehicle crashes were SR 56/N Chancery Street at SR 380/E Morford Street, SR 56/N Chancery Street at SR 380/E Main Street, and SR 55/S Chancery Street at SR 56/E Colville Street, which are all signalized intersections. Improvements such as providing better visibility, incorporating bulb outs, or enhancing crosswalks at these intersections should be considered to improve the safety of motorists as well as the more vulnerable users. Leading pedestrian intervals for the pedestrian signals should also be considered, especially within the downtown area.

There were also high concentrations of vehicular crashes along SR 380/E Morford Street near Lind Street and all along SR 380/E Main Street. The City should consider whether the one-way pair system of SR 380/E Morford Street and SR 380/E Main Street provides the best alternative for throughput, access, and use of the existing ROW. Converting these streets back to two-way traffic flow could be an opportunity to include bike lanes and reduce speeds, thereby reducing crash severity for all users.

Figure 26 – City of McMinnville Non-Motorized Crashes (2002-2016)



Proximity to Low Income Areas

From the socioeconomic analysis, it was found that within the census tract located north of downtown McMinnville, 40-50 percent of people are living under the poverty line. Figure 27 and Figure 28 show the existing sidewalk network and the BLOS overlaid on the poverty status maps, respectively. The area north of SR 56/E Colville Street and east of SR 56/N Chancery Street show that 30-40 percent of the population in these census tracts are living below the poverty line. In general, there is decent sidewalk coverage downtown, but there are gaps along SR 56/Beersheba Highway, Durham Street, and Bernard Street. Due to the lack of bicycle facilities, the BLOS for many of these streets are D or worse. Improvements that help connect these areas to employment areas, grocery stores, recreational facilities, and other places of interest around the city should be prioritized as these are likely users who rely on non-motorized modes and public transit as their main means of transportation.

Figure 27 – City of McMinnville Poverty Status by Census Tract

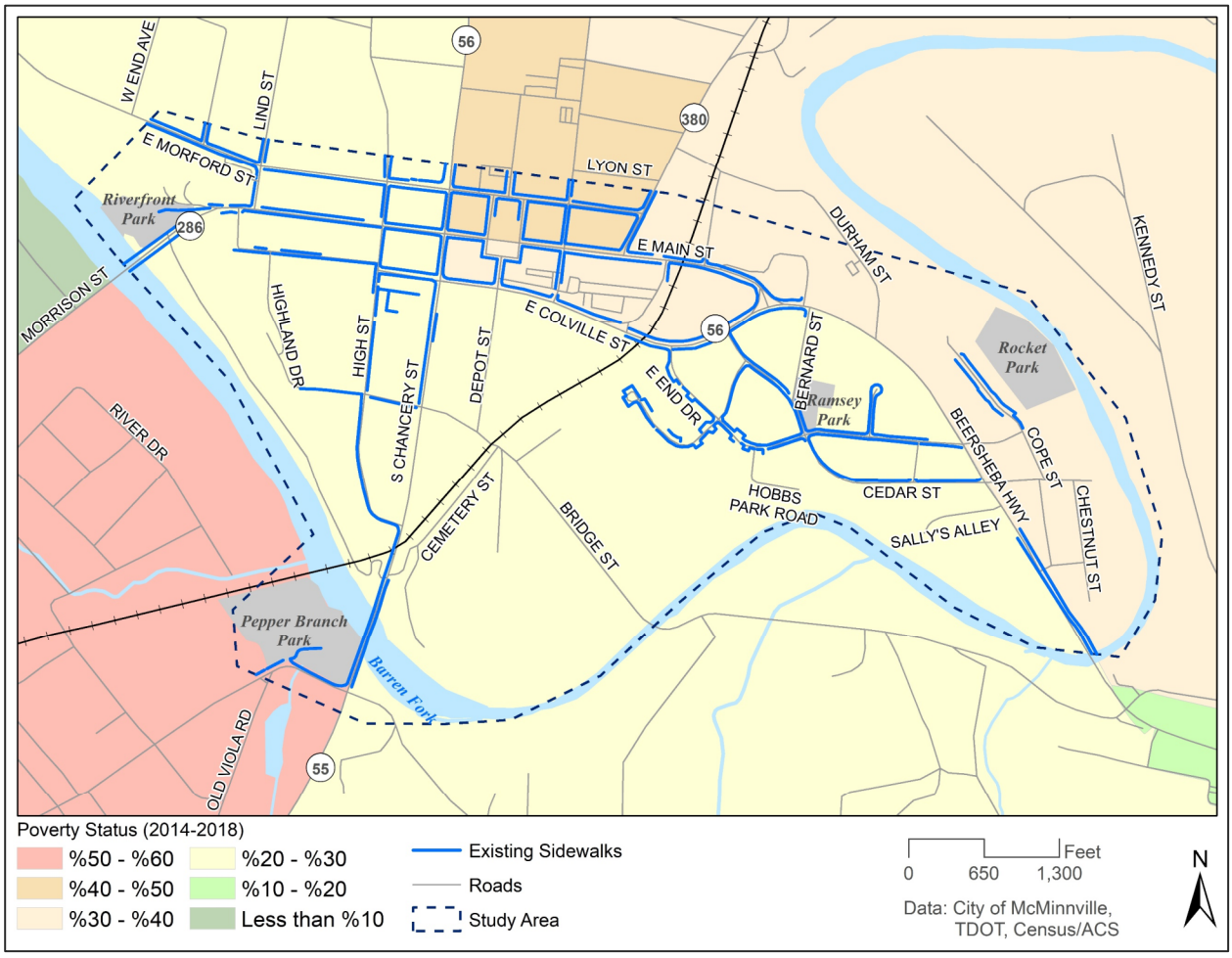
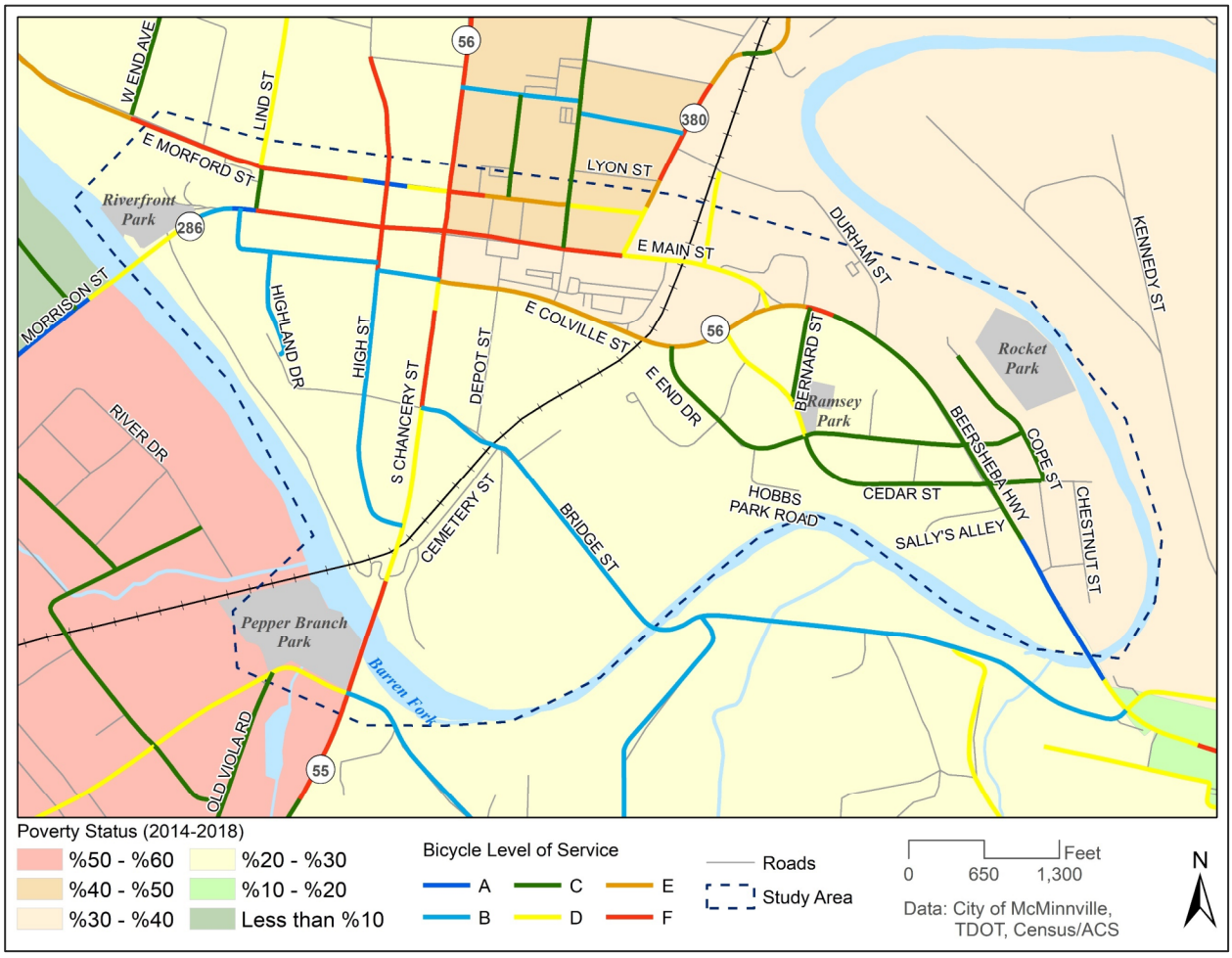


Figure 28 – City of McMinnville Poverty Status by Census Tract



Proximity to Schools

There are no schools within the study area; however, the Safe Streets to Schools Bicycle and Pedestrian Plan is being developed concurrently with this plan. The City of McMinnville should refer to that plan to prioritize network improvements that will provide better non-motorized access to the local schools north of the study area and ensure that those improvements are cohesive with improvements suggested in this plan.

Improvements

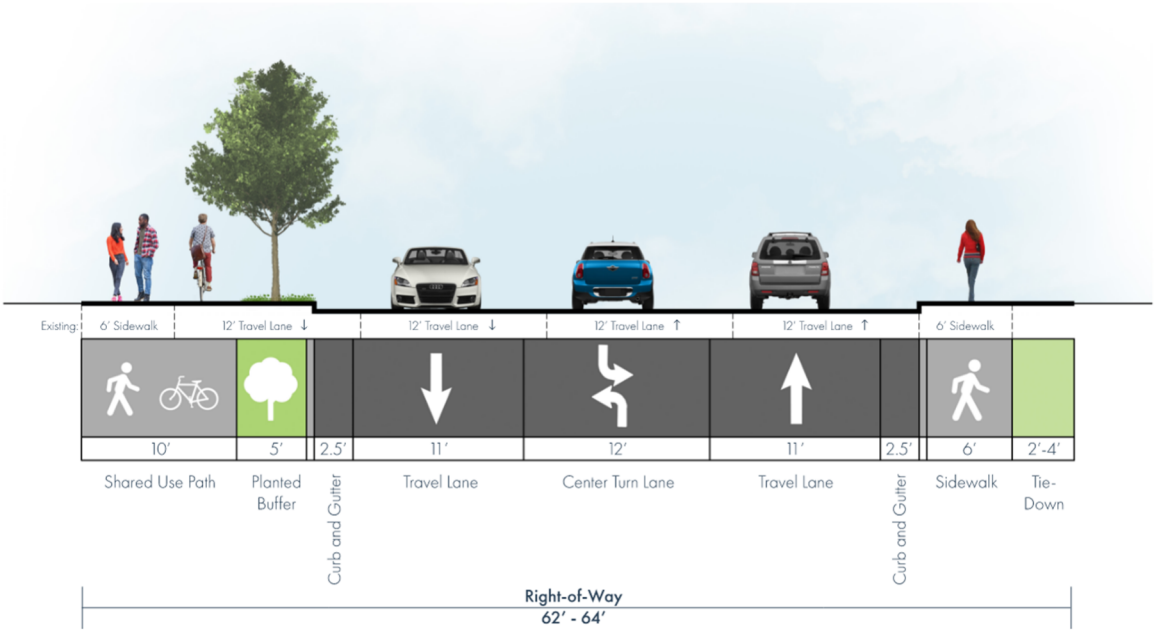
This section details the improvements that the City of McMinnville should focus on to create a more comprehensive active transportation network within the study area.

SR 56/E Colville Street Roadway Reconfiguration

According to the first stakeholder meeting, providing an east-west connection from Riverfront Park to Rocket Park was a top priority. SR 56/E Colville Street is currently a four-lane facility with sub-standard sidewalks on the north side between SR 55/S Chancery Street and Market Street. East of Market Street to E Main Street, there are 6-foot sidewalks provided on the north and south sides of SR 56/E Colville Street. The latest traffic information shows that there are approximately 5,200 vehicles per day along SR 56/E Colville Street. The existing ROW and existing traffic volumes make SR 56/E Colville Street a viable candidate to reallocate the roadway space to include bicycle and pedestrian facilities.

Figure 29 shows the proposed typical cross-section for SR 56/E Colville Street, which would include a 10-foot shared use path on the north side and a 6-foot sidewalk on the south side of the roadway. The four travel lanes would be replaced with one travel lane in each direction and a center turn lane between S High Street and E Main Street. This configuration would fit within the existing ROW and allow room to tie-down on the south side of SR 56/E Colville Street. The daily traffic volumes on SR 56/E Colville Street suggest that converting the 4-lane typical section to 3-lanes can be accommodated without impacting traffic flow and vehicular levels of service.

Figure 29 – Proposed SR 56/E Colville Street Typical Cross-Section



The following sections describe more detailed treatment options that provide for a safer walking and biking experience along SR 56/E Colville Street. The concept plan segments are provided in Appendix C.

SR 55/S Chancery Street Intersection

Figure 30 shows the existing intersection of SR 55/S Chancery Street and SR 56/E Colville Street next to the proposed improvements. As shown in Figure 30, the existing intersection is extremely offset, which can cause confusion to drivers. The building on the northwest corner of the intersection is abutting the existing sidewalk and causes line of sight issues for drivers. There are no existing crosswalks or pedestrian signals. The large radius in the northeast quadrant poses a risk to pedestrians because it allows for right turns to be taken at a very high speed.

The proposed intersection improvements will provide safety benefits to drivers, pedestrians, and bicyclists. The major change would be to realign W Colville Street with SR 56/E Colville Street. This would require encroaching into the ROW for the parcel in the southwest quadrant, which is currently owned by the City of McMinnville. The curb radii for each corner would be reduced to 20 feet, which will force drivers to slow down to make right turns. It also provides a shorter crossing distance for pedestrians, leaving them exposed to traffic for a shorter period of time. Due to the prevalence of large trucks at this intersection, the northeast and southeast corners of the intersection will include a mountable curb and truck apron. This provides the visual separation between the travel lane and the pedestrian area for passenger vehicles, while also allowing trucks to make wider right turns. Marked crosswalks are proposed across all legs of the intersection, which should be accompanied with pedestrian phases at the signal. This reconfiguration would also solve the northwest corner line of sight issues for drivers. Figure 31 provides a visualization of what the new intersection will look like from the street-level view.

Figure 30 – SR 55/S Chancery Street at SR 56/E Colville Street Intersection Improvements

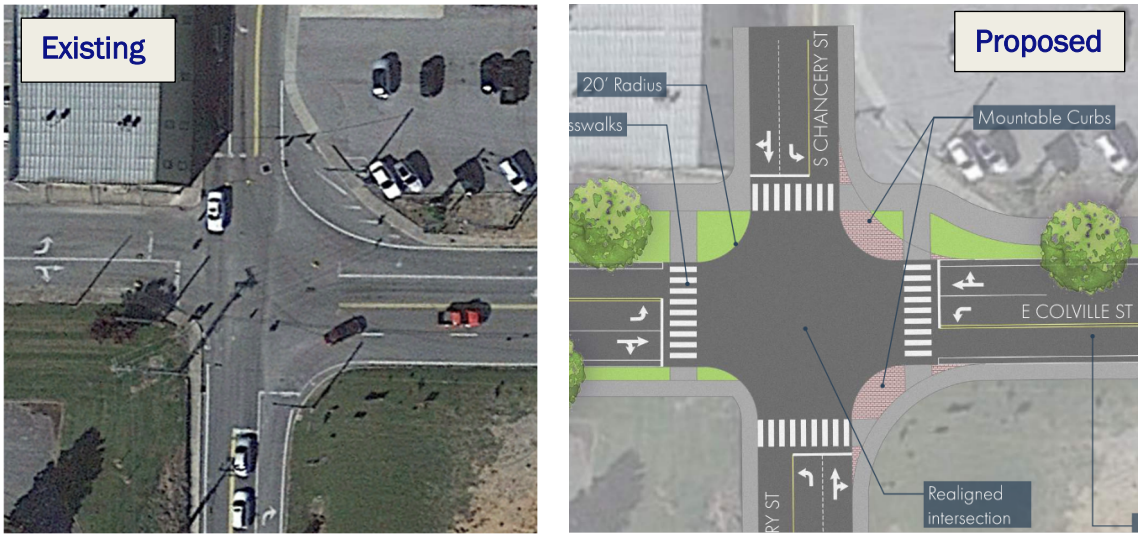


Figure 31 – SR 55/S Chancery Street at SR 56/E Colville Street Intersection Improvements – Street Level View

E Main Street Intersection

The intersection of E Main Street and SR 56/E Colville Street is a T-intersection and has right turn slip lanes on the southbound and westbound approaches. While these channelized right-turn lanes make it easier for vehicles to make these maneuvers without slowing down significantly, they pose a high risk for pedestrians. There are two multi-family housing units located on either side of E Main Street and a bus stop along E Main Street at the intersection. Further east along the south side of SR 56/Beersheba Highway, within 1,000-feet of the intersection, are the meeting place for the Young Men United group and two convenience stores. Ramsey Park is located off Bernard Drive, which is also located east of the intersection on the south side of SR 56/Beersheba Highway.

There is a lot of potential pedestrian activity at this intersection, but it is currently designed to favor vehicular traffic. Even though there are sidewalks on both sides of the road, the slip lanes and lack of crosswalks make it unsafe for pedestrians to cross at any location. Figure 32 shows the proposed improvements to the E Main Street intersection, which include removing the slip lanes and adding crosswalks across E Main Street and SR 56/Beersheba Highway. The City of McMinnville plans to add a bus stop along E Main Street just north of the driveway opening that will serve both the northbound and southbound directions. It is recommended that this bus stop is designed with amenities such as a covered shelter, benches, and a trash can. The reduction in the intersection footprint results in a great opportunity to implement parklets within the leftover green space.

The crosswalk across SR 56/Beersheba Highway should be as visible as possible. Some best practices for crossings at an unsignalized intersection include providing a raised median at the crosswalk location to provide refuge for the pedestrians and to act as a traffic calming device, providing a raised pedestrian crossing that forces vehicles to slow down, including sufficient overhead lighting so that pedestrians can be seen clearly by drivers, installing a pedestrian hybrid beacon (formerly known as HAWK beacons), or installing a rectangular rapid-flashing beacon (RRFB). At a minimum, lighting and either the raised median or the raised pedestrian crossing should be installed here. Figure 33 provides a visualization of what the new intersection will look like from the street-level view.

Figure 32 – E Main Street at SR 56/E Colville Street Intersection Improvements

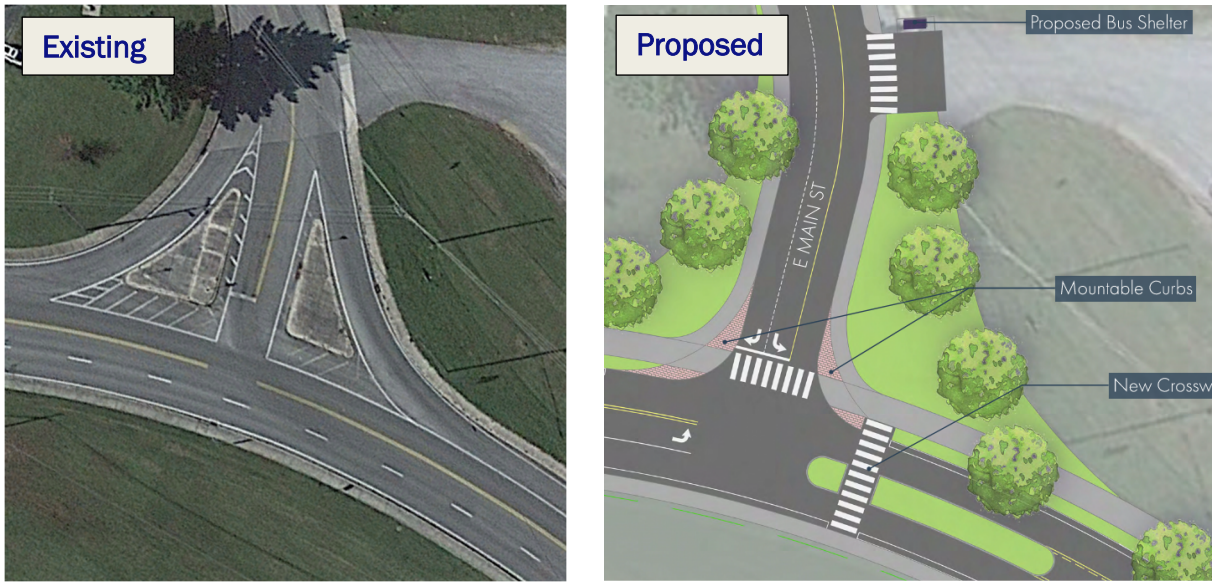


Figure 33 – E Main Street at SR 56/E Colville Street Intersection Improvements – Street Level View

W Colville Street between High Street and SR 55/S Chancery Street

Along with the realignment of the SR 55/S Chancery Street intersection, it makes sense to continue the new SR 56/E Colville Street cross-section through to S High Street, which is only a 400-foot section. This will require some ROW acquisition of the parcel on the south side of W Colville Street, but the benefits of having a new ADA-compliant sidewalk buffered from the travel lanes outweigh the loss of this strip of land. The new cross-section will also allow for the shared-use path to be offset from the building located in the northwest corner of the SR 55/S Chancery Street intersection. Currently, the steps to the building's Colville Street entrance are within the sidewalk.

It is recommended that the undefined driveway entrances be consolidated into one opening to limit the number of exposure points for pedestrians and bicyclists using the shared-use path. From the end of the shared-use path at S High Street, pedestrians and bicyclists can utilize the local street network, which have significantly less vehicular traffic, to access Riverfront Park.

Curb Radii Reduction

When implementing the new cross-section, it is recommended to reduce the curb radii at all intersections to be no larger than 20-feet. This will help to reduce the distance pedestrians are exposed to vehicles and will force drivers to slow down to make right turns into the driveways and side streets.

Downtown McMinnville

In 2001, the City developed a Downtown Master Plan to revitalize their downtown to make it more accessible and vibrant. SR 380/Main Street between SR 56/N Chancery Street and Sparta Street and Court Square received landscaping, lighting, and sidewalk upgrades as a result of this plan, but other areas of the downtown could benefit from a reexamination of potential pedestrian and bicycle improvements that could promote attraction to downtown as a destination.

SR 380/Morford Street and SR 380/Main Street One-Way Pairs

SR 380/Main Street is a one-way facility eastbound between Lind Street and Sparta Street. It has three travel lanes between Lind Street and SR 56/N Chancery Street and two travel lanes and on-street parking on both sides of the road east of SR 56/N Chancery Street.

Figure 34 - SR 380/Main Street

SR 380/Morford Street is a one-way facility westbound between Lind Street and Sparta Street. It has two travel lanes and on-street parking on the north side of the road between SR 56/N Chancery Street and Sparta Street. West of SR 56/N Chancery Street, SR 380/Morford Street has three travel lanes.

The one-way pair system was introduced in the late 1940s/early 1950s to manage traffic through the downtown. When the US 70S/SR 55 Bypass was completed, much of this traffic was removed. Today SR 380/Main Street carries approximately 5,700 vehicles daily and SR 380/Morford Street carries approximately 6,700 vehicles daily. Though these volumes have been increasing steadily over the past five years, they are still relatively low. A detailed traffic study would be needed to understand how converting the streets back to a two-way configuration would impact traffic, but it is recommended that the City consider this option.

There were several comments received via the public survey about how confusing the intersection of Lind Street and SR 380/Morford Street is currently. With the conversion back to two-way operation, this intersection could operate as a normal four-legged intersection with crosswalks on all approaches.

Converting these streets back to two-way traffic flow also provides an opportunity to reconfigure the roadways to include bike lanes and reduce speeds. Although the sidewalks along SR 380/Main Street are wide, all the streetscape features create a sense of confinement, especially in front of restaurants and the Park Theater. When considering a new cross-section for SR 380/Main Street, the City should consider removing some of the on-street parking and replacing it with wide sidewalks that could accommodate café-style outdoor seating in front of the restaurants and a plaza area in front of the Park Theater where people can gather before and after shows.

Traffic Calming

Along SR 380/Main Street between SR 56/N Chancery Street and Sparta Street, many traffic calming measures, such as landscaping, bulb outs at intersections, and pavement treatments at Court Square are already in place. Along this portion of SR 380/Main Street, painted crosswalks are recommended so that drivers can more easily distinguish crossing areas from the rest of the street.

Figure 35 - SR 380/E Main Street at Spring Street

It is recommended that bulb outs should be implemented at all intersections along with painted crosswalks. Where there are pedestrian signals, the City should consider providing leading pedestrian intervals. This method of signal phasing calls the

pedestrian phase before the vehicle phase, giving pedestrians a few seconds to establish their presence within the crosswalk before vehicles begin moving.

Parking Study

It is recommended that the City perform a parking study for downtown McMinnville to determine how much surface parking is available. It appears that there are several lots behind buildings that can be used for public parking, depending on the owner's willingness to allow this use. Providing adequate signage to direct drivers to parking locations and sidewalks leading from the parking lots to key destinations is recommended. If it is determined that the city has enough parking, they should consider removing some of the on-street parking from SR 380/Main Street and/or SR 380/Morford Street. Removing on-street parking can be a very sensitive topic, so the parking study will need to include ample opportunities for stakeholders to offer their opinion regarding the on-street parking spaces. This street space may be better utilized for bicycle and pedestrian facilities.

Wayfinding

Wayfinding signage helps an area establish an identity while also benefiting all users traveling through. Signage for public parking, parks, the Court Square, the Farmer's Market, and bike routes/greenways would help visitors and residents find and utilize the City's facilities more efficiently.

SR 55/S Chancery Street Improvements

SR 55/S Chancery Street is a two-lane facility with intermittent sidewalk coverage. There are some areas with a paved shoulder in the northbound direction that a confident bicyclist could use, but for the most part, biking on this roadway is difficult for the majority of users. According to the public survey, SR 55/S Chancery Street was selected as the preferred route from Pepper Branch Park to downtown; however, the route along S High Street was ranked closely behind. There is a steep incline northbound along SR 55/S Chancery Street that makes it a challenging route for cyclists. Due to these constraints, it is recommended that the improvements along SR 55/S Chancery Street be limited to upgraded sidewalks with adequate lighting and to add sharrows to S High Street to accommodate bicyclists.

Figure 36 - SR 55/S Chancery Street Bridge

The bridge over the Barren Fork River, which leads to Pepper Branch Park, consists of sidewalks on both sides of the roadway but no room for a dedicated bicycle facility. The bridge is the only connection between the Barren Fork Greenway trailhead and Pepper Branch Park. The bridge is approximately 30 feet wide. One solution to provide bicycle accommodations would be to shift the travel lanes to the east and provide a shared pedestrian and bicycle space

on the west side of the bridge. If the pedestrian facility is shifted to one side, crossings would then need to be provided at Old Morrison Road/Rivercliff Road to get pedestrians back to the other side of SR 55/S Chancery Street.

Additionally, a mid-block crossing along SR 55/S Chancery Street at Cemetery Street should be considered. Cemetery Street is directly across from the Barren Fork Greenway trailhead and provides a direct connection along a low-volume street to Depot Bottom.

Figure 37 - SR 55/S Chancery Street at Barren Fork Greenway Trailhead

SR 56/Beersheba Highway Improvements

SR 56/Beersheba Highway is a two-lane facility serving approximately 8,400 vehicles per day. There are no sidewalks or bicycle facilities provided north of Sally's Alley, although there are paved areas outside of the travel lane that confident riders can utilize. SR 56/Beersheba Highway turns into SR 56/E Colville Street at the E Main Street intersection, which is where the proposed shared-use path ends. Both Rocket Park and Ramsey Park are located off SR 56/Beersheba Highway, making it a critical roadway within the non-motorized transportation network. It is recommended that the shared-use path be extended along SR 56/Beersheba Highway on the northeast side of the roadway down to East End Drive. Sidewalks should be provided on the southwest side of the roadway. South of East End Drive, sidewalks are recommended along both sides of the roadway.

SR 56/Beersheba Highway looking north

SR 56/Beersheba Highway looking south

Proposed Non-Motorized Transportation Network

The following sections detail the critical connections that will promote a cohesive active transportation network throughout the study area.

Sidewalk Gap Closures

There are several gaps within the existing sidewalk network that should be filled. The list below represents the larger sections of sidewalk along the busier roadways that would help to provide the pedestrian connections between all the City's parks within the study area. Figure 39 also shows these proposed sidewalk connections.

- South side of SR 56/E Colville Street
- Both sides of SR 56/Beersheba Highway from Bernard Street to south of Sally's Alley
- SR 55/S Chancery Street
- Both sides of Durham Street
- Both sides of Depot Street
- Both sides of Morrison Street from bridge over Barren Fork River to existing sidewalk
- Both sides of S High Street where missing
- North side of SR 380/E Morford Street between Lind Street and High Street
- Both sides of East End Drive between SR 56/Beersheba Highway and Cope Street
- Both sides of W Colville Street south of Morrison Street
- East side of Bernard Street

Figure 38 - S High Street

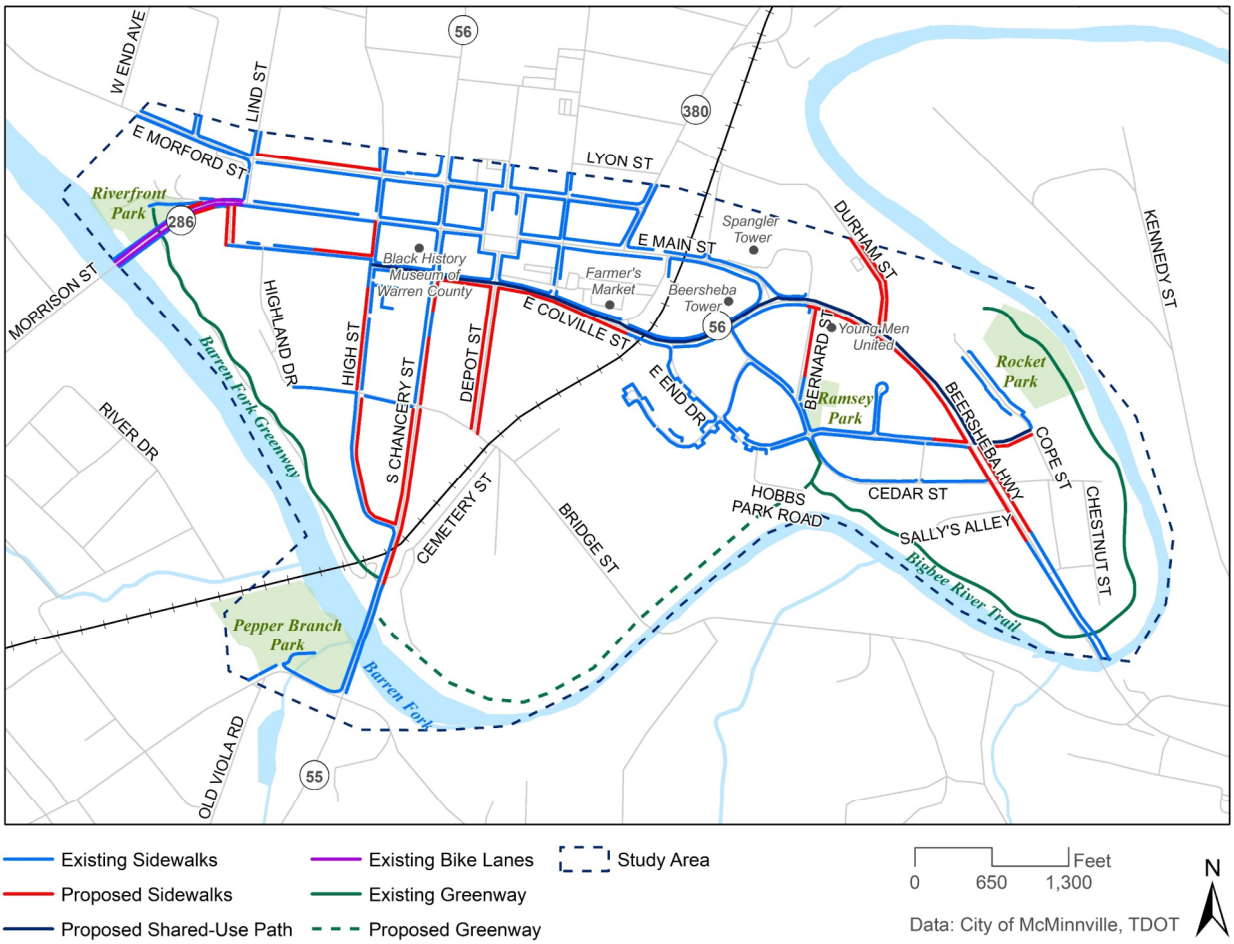
East End Drive

Depot Street

New Greenway Connection

There is a desire to connect the Barren Fork Greenway and the Bigbee River Trail with a new greenway that would parallel the Barren Fork River, as shown in Figure 39. It is recommended that this greenway be paved so that it could accommodate all users.

Figure 39 – Proposed Pedestrian Network



New Bicycle Facilities

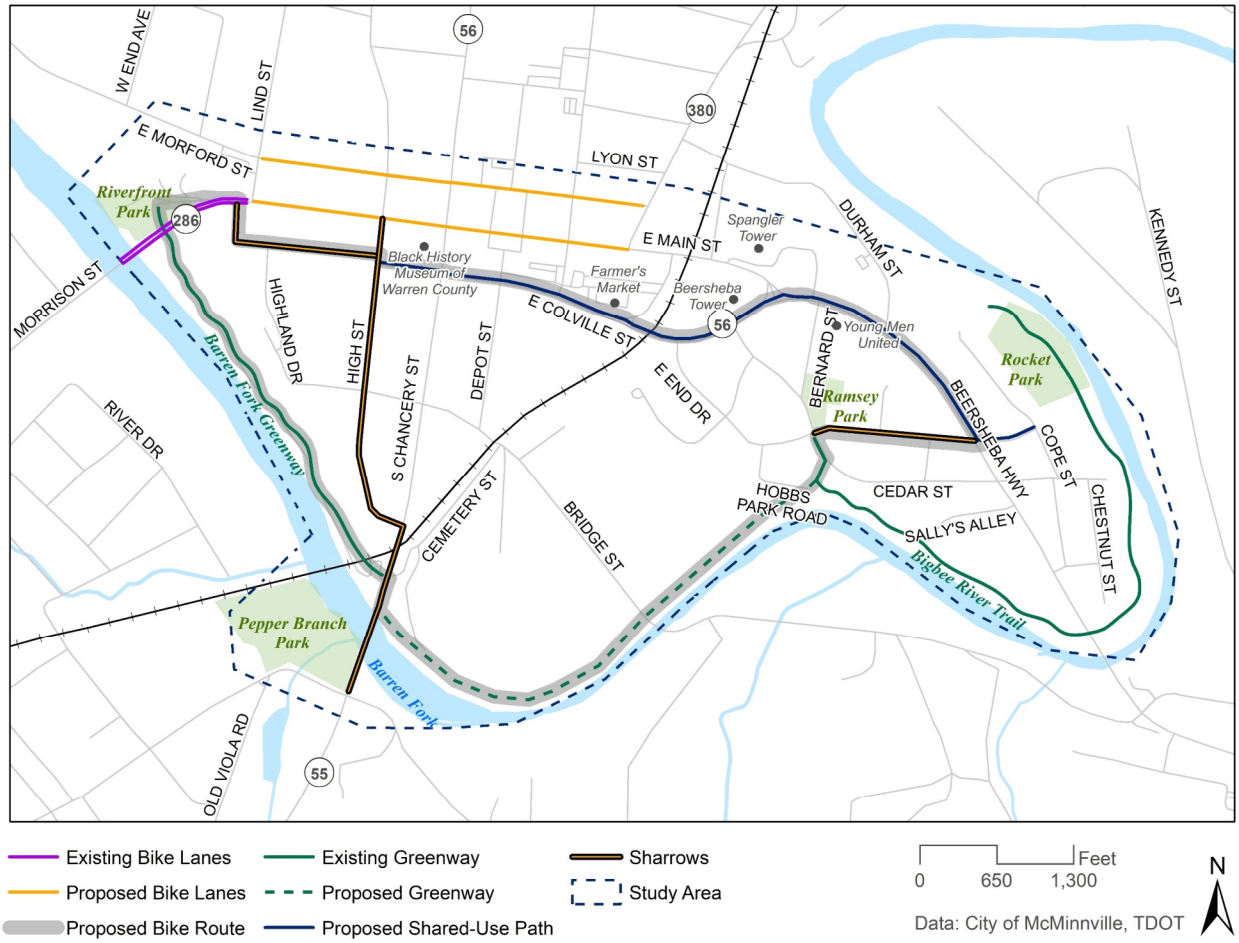
There are currently bike lanes along Morrison Street, which could be continued along SR 380/Main Street. In the near-term, while the SR 380/Main Street and SR 380/Morford Street one-way pairs are still operational, bike lanes should also be included along SR 380/Morford Street. Although it is located outside of the study area, future bicycle connections could be provided along Lind Street to access the McMinnville Civic Center, located on Garfield Street.

Shared lane markings, more commonly known as sharrows, designate that vehicles and bicycles must occupy the same lane. Though bicycles are legally allowed on any roadway, these markings (coupled with “Bicyclists may use Entire Lane” signs) alert drivers to the likely presence of bicyclists. Sharrows are recommended along low-volume, low-speed roads.

Figure 40 presents a potential bicycle network in the study area once all the improvements are in place. Someone could ride their bike from Riverfront Park down the Barren Fork Greenway then along the proposed greenway where it would pick up with the end of the Bigbee River Trail at East End Drive. Due to the low traffic volumes on East End Drive, this facility could be marked with sharrows. The bicyclist

could then pick up the shared-use path on SR 56/Beersheba Highway and ride it all the way to its terminus at S High Street. The last portion of the route would be along W Colville Street and W Lawn Street, which could be marked with sharrows.

Figure 40 – Proposed Bicycle Facilities



Implementation Plan

This study provides the framework to transform the study area into a space where residents and visitors can safely get to key destinations without the need of a vehicle. The improvements laid out in this report promote an improved quality of life for residents, tourists, and the local work force. The scenarios developed in this report are intended to serve as a long-range master plan for the City of McMinnville; however, in an effort to help the City strategize and plan for this ultimate vision, the following provides an implementation plan that categorizes the projects into short-, mid-, and long-term timeframes. Within the short-, mid-, and long-term timeframes, the projects are listed in no particular order and implementation will depend on available funding from the City.

Short-Term Projects

Sharrows

While sharrows are a lower-cost option than bike lanes or separated bicycle facilities, they are not applicable on all roadways. The plan identifies S High Street, W Colville Street, and East End Drive as good candidates for sharrows due to their low traffic volumes.

Crosswalks

Throughout downtown, the City should consider enhancing the existing stamped concrete crosswalks with paint so that drivers can more easily distinguish crossing areas from the rest of the street. Painted crosswalks should also be added to each of the signalized intersections along SR 380/Main Street and SR 380/Morford Street. Additionally, the City should consider adding crosswalks to the intersection of SR 55/S Chancery Street at SR 56/E Colville Street in the short term.

Bulb Outs

Bulb outs have been installed along much of SR 380/Main Street and SR 380/Morford Street, but there are some intersections without this feature. The City should consider taking an inventory and adding bulb outs at signalized intersections and mid-block crossings where they do not currently exist such as the northeast corner of SR 56/N Chancery Street and SR 380/Main Street and at the intersection of SR 380/Morford Street and College Street.

Bernard Street Sidewalks

One of the first sidewalk gaps to address should be along Bernard Street to provide safe access between the Young Men United building and Ramsey Park.

Lind Street @ SR 380/Morford Street Intersection

Short term improvements for this intersection include adding crosswalks and appropriate pedestrian signage, enhanced pavement markings, and providing delineators that will help drivers navigate the intersection. Providing a stop sign instead of the yield control along westbound SR 380/Morford Street would allow for increased pedestrian safety for those crossing the southern leg of the intersection.

S High Street Sidewalks

Many of the sidewalks along S High Street are currently in disrepair. Upgrading the existing sidewalks should be one of the City's first priorities so that pedestrians have a safe route to walk between Pepper Branch Park and downtown.

SR 55/S Chancery Street Mid-Block Crossing

A mid-block crossing along SR 55/S Chancery Street at Cemetery Street should be considered in the short term. Cemetery Street is directly across from the Barren Fork Greenway trailhead and provides a direct connection along a low-volume street to Depot Bottom.

SR 56/E Colville Street Crossing

A crossing along SR 56/E Colville Street at E Main Street should be considered in the short term to provide much needed access from the multi-family housing along E Main Street and the convenience stores, Young Men United building, and Ramsey Park, which are all located on the south side of SR 56/E Colville Street/Beersheba Highway.

SR 380/Main Street & SR 380/Morford Street Two-Way Conversion

There is probably no longer a need for the one-way pairs through downtown since the US 70S/SR 55 Bypass was constructed; however, a traffic study will need to be performed to validate this assumption. Converting these streets back to two-way operation would provide an opportunity to incorporate complete streets elements to both roadways.

SR 380/Main Street & SR 380/Morford Street Bike Lanes

According to the Strava data, cyclists are currently using SR 380/Main Street and SR 380/Morford Street heavily. Even if these streets are not converted back to two-way in the short term, bike lanes could be provided to give cyclists more protection from vehicular traffic.

Wayfinding Program

The City should provide wayfinding signage for public parking, parks, the Court Square, the Farmer's Market, and bike routes/greenways to help visitors and residents utilize the City's facilities more efficiently.

Leading Pedestrian Intervals

Where there are existing pedestrian signals, the City should consider providing a leading pedestrian intervals phase to the signal cycle.

Mid-Term Projects

Filling Sidewalk Gaps

The City should create a mid-term plan to upgrade the sidewalks identified as needing repairs in their sidewalk inventory and to fill the gaps identified in this study.

Lind Street @ SR 380/Morford Street Intersection

Modifications to the intersection of Lind Street and SR 380/Morford Street will depend on whether or not SR 380/Main Street and SR 380/Morford Street are converted back to two-way. If they are converted to two-way, this intersection could operate as a normal four-legged intersection with crosswalks on all approaches.

SR 55/S Chancery Street Bridge

This plan recommends that the SR 55/S Chancery Street Bridge be retrofitted to shift the travel lanes to the east and allow for a shared-use path on the west side of the bridge. The City will need to confirm that the existing sidewalks on the bridge could be removed to allow for this retrofit.

E Main Street @ SR 56/E Colville Street Intersection

The intersection of E Main Street and SR 56/E Colville Street is currently auto-oriented with channelized right turn lanes and no pedestrian crosswalks. The City should consider improving this intersection in the mid-term to remove the channelized right turn lanes and add crosswalks across E Main Street. The radii should be reduced to discourage high-speed right turn movements and to decrease the pedestrian crossing distance. A mountable truck apron should also be considered at the intersection to accommodate large trucks.

Long-Term Projects

SR 56/E Colville Street Roadway Reconfiguration

The reconfiguration of SR 56/E Colville Street is intended to be a long-term vision for the City; however, improvements can be phased over time to reap the benefits of a multimodal corridor. The first phase would include adding sidewalks to the south side of SR 56/E Colville Street and painting the reduced number of lanes in the typical section to show one lane in each direction and a center turn lane. The second phase of the project would include updating the sidewalks on the north side to a shared-use path and installing the landscaped medians.

SR 56/Beersheba Highway Roadway Reconfiguration

The SR 56/Beersheba Highway roadway reconfiguration is an extension of the SR 56/E Colville Street cross-section. Since SR 56/Beersheba Highway does not currently have sidewalks on either side of the roadway, the first phase of this project should include installing a 6-foot sidewalk on the west side of the street and a 10-foot shared-use path on the east side of the street, which should be placed in their ultimate locations to avoid unnecessary rework.

New Greenway

The new greenway connecting Barren Fork Greenway to the Bigbee River Trail will require extensive planning and ROW acquisition. This is a critical missing link for the City and should be considered a high priority long-term project.

Identification of Funding Sources

Finding sufficient funding to construct transportation projects is often difficult, especially for small communities like McMinnville. Table 13 summarizes the various federal, state, and local funding sources that are available for implementing transportation and non-motorized improvements. These programs focus on multimodal improvements such as sidewalks, bike lanes, shared-use paths, and other similar infrastructure. The applicable project recommendations for each grant are listed in Table 14.

In addition to the programs identified in Table 13, the City may also consider timing projects that require new striping with the State or City's resurfacing program.

Table 13 – Funding Strategies

Grant/Program	Agency	Examples of Eligible Activities	Funding
Multimodal Access Grant	TDOT Multimodal Division	Multimodal Access Grant funding is available to improve transportation access for pedestrians, bicyclists, and transit users along State Routes using the following improvement types: sidewalks; pedestrian crossing improvements; bicycle facilities; multi-use paths; transit stop amenities; complete streets, road diet or traffic calming measures; improvements that address ADA non-compliance; pedestrian-scale lighting; and other improvements which primarily improve access for multimodal users.	95% state 5% local match State portion may not exceed $950,000
Transportation Alternatives Program (TAP)	TDOT Local Programs	All facilities must be hard-surfaced, ADA compliant, and provide adequate connectivity and separation from vehicular traffic. Sidewalk facilities must be a minimum of 5 feet wide and shared-use facilities must be a minimum of 10 feet wide. TAP funds can be used for sidewalks, walkways or curb ramps, bike lane striping, wide paved shoulders, bike parking and bus racks, traffic calming for the safety of bike/ped traffic, off-road trails, bike and pedestrian bridges/underpasses, and ADA compliance.	20% local match for construction Preliminary engineering, design, and ROW expenses are responsibility of local government
Recreational Trails Program	TDEC	Provides grant funding for land acquisition for trails, trail maintenance, trail construction, trail rehabilitation, and for trail head support facilities. All grant projects MUST be on publicly owned land.	20% local match
Local Parks and Recreation Fund	TDEC	Provides for the purchase of land for parks, natural areas, greenways, and the purchase of land for recreational facilities. Funds may also be used for trail development and capital projects in parks, natural areas, and greenways.	50% local match
Community Development Block Grant	TN Dept of Economic and Community Development	Provide essential, pressing community development needs in underserved areas. Can go towards community livability projects.	100% federal
Highway Safety Improvement Program	FHWA	The FAST Act continues the overarching requirement that HSIP funds be used for safety projects that are consistent with the State's Strategic Highway Safety Plan and that correct or improve a hazardous road location or feature or address a highway safety problem. The FAST Act specifically identifies the following activities on the inclusion list: installation of vehicle-to-infrastructure communication equipment; pedestrian hybrid beacons; and roadway improvements that provide separation between pedestrians and motor vehicles, including medians and pedestrian crossing islands	90% federal 10% local match

Grant/Program	Agency	Examples of Eligible Activities	Funding
Surface Transportation Block Grant	FHWA	In general, STBG projects may not be on local roads or rural minor collectors. There are a number of exceptions to this requirement, such as the ability to use up to 15 percent of a state's rural suballocation on minor collectors. Other exceptions include: bridge and tunnel projects; safety projects; fringe and corridor parking facilities/programs; recreational trails, pedestrian and bicycle projects, and safe routes to school projects; boulevard/roadway projects largely in the ROW of divided highways; inspection/evaluation of bridges, tunnels, and other highway assets; port terminal modifications; and projects within the pre-FAST Act title 23 definition of "transportation alternatives."	80% federal 20% local match
Built Environment Grants	TN Dept of Health	These grants aim to increase access to safe and publicly accessible places that provide opportunities for physical activity for a diverse group of users, including those who live, visit, work, play, worship, and learn in the community.	Up to $85,000
Project Diabetes	TN Dept of Health	Grants are awarded to community partners with a focus on reducing overweight and obesity as risk factors for the development of type 2 diabetes. Grant activities are geared toward interventions that are applied before there is any evidence of disease.	Category A – funded up to 3 years; max of $150,000/year Category B – funded up to 2 years; max of $15,000/year
Community Grant Program	People for Bikes	Focuses most grant funds on bicycle infrastructure projects, such as: bike paths, lanes, trails, and bridges; mountain bike facilities; bike parks and pump tracks; BMX facilities; and end-of-trip facilities such as bike racks, bike parking, bike repair stations, and bike storage. Some advocacy projects are also funded, such as: programs that transform city streets, such as Ciclovias or Open Streets Days; and campaigns to increase investment in bicycle infrastructure.	Up to $10,000
Fasttrack Infrastructure Program	TN Dept of Economic and Community Development	Grants made to local governing bodies for public infrastructure improvements must be for specific infrastructure projects benefiting one or more companies committed to creating new jobs and/or making new capital investments. Covers infrastructure such as rail, public roadway, port, airport, site, water, sewer, gas and telecommunication improvements.	Local matching based on community's ability to pay At-Risk County – 35% premium to projects

Table 14 – McMinnville Recommendations Grant Matching

Grant/Program	Types of Projects	Applicable McMinnville Projects
Multimodal Access Grant	Any multimodal project along a State Route	- SR 55/S Chancery Street Mid-Block Crossing - SR 56/E Colville Street Crossing - SR 55/S Chancery Street Bridge - E Main Street @ SR 56/E Colville Street Intersection - SR 56/E Colville Street Roadway Reconfiguration - SR 56/Beersheba Highway Roadway Reconfiguration
Transportation Alternatives Program	Construction only bicycle or pedestrian improvements	- Bulb Outs - Bernard Street Sidewalks - Lind Street @ SR 380/Morford Street Intersection (crosswalks, pedestrian signage, pavement markings) - S High Street Sidewalks - SR 55/S Chancery Street Mid-Block Crossing - SR 56/E Colville Street Crossing - SR 380/Main Street & SR 380/Morford Street Bike Lanes - Filling Sidewalk Gaps - SR 55/S Chancery Street Bridge
Recreational Trails Program	Trails on publicly owned land	- New Greenway
Local Parks and Recreation Fund	Land purchase or development of trails, parks, and/or greenways	- New Greenway
Community Development Block Grant	Community Development in underserved areas	- Bernard Street Sidewalks - Lind Street @ SR 380/Morford Street Intersection (crosswalks, pedestrian signage, pavement markings) - SR 56/E Colville Street Crossing - Filling Sidewalk Gaps - E Main Street @ SR 56/E Colville Street Intersection - SR 56/E Colville Street Roadway Reconfiguration - SR 56/Beersheba Highway Roadway Reconfiguration
Highway Safety Improvement Program	Safety project that corrects a hazardous road or feature	- Lind Street @ SR 380/Morford Street Intersection (crosswalks, pedestrian signage, pavement markings) - Realignment of SR 56/E Colville Street and SR 55/S Chancery Street Intersection

Grant/Program	Types of Projects	Applicable McMinnville Projects
Surface Transportation Block Grant	Everything	- ALL
Built Environment Grants	Opportunities for physical activity	- Bernard Street Sidewalks - S High Street Sidewalks - SR 380/Main Street & SR 380/Morford Street Bike Lanes - Filling Sidewalk Gaps - SR 55/S Chancery Street Bridge - SR 56/E Colville Street Roadway Reconfiguration - SR 56/Beersheba Highway Roadway Reconfiguration - New Greenway
Project Diabetes	Interventions to reduce obesity	- Bernard Street Sidewalks - S High Street Sidewalks - SR 380/Main Street & SR 380/Morford Street Bike Lanes - Filling Sidewalk Gaps - SR 55/S Chancery Street Bridge - SR 56/E Colville Street Roadway Reconfiguration - SR 56/Beersheba Highway Roadway Reconfiguration - New Greenway
Community Grant Program	Bicycle infrastructure	- Sharrows - SR 380/Main Street & SR 380/Morford Street Bike Lanes - SR 55/S Chancery Street Bridge - New Greenway
Fasttrack Infrastructure Program	Transportation projects supporting new business infrastructure	- Any project that supports job creation

TN TDOT Department of Transportation

CDM Smith